SHARP Environmental Engineers and Scientists
AND ASSOCIATES, INC.

982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
Fax (614) 841-4660

February 15, 2002

Ms. Nancy Lou Minkler
Remedial Project Manager
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Subject: Transmittal of January 2002, Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site, Goodyear, Arizona

Dear Ms. Minkler:

Attached is the monthly progress report for January 2002, for the PGA site in Goodyear, Arizona. This report is being submitted on behalf of The Goodyear Tire & Rubber Company (GTRC) to fulfill the reporting requirements outlined in the consent decree. Activities conducted this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual ground water samples and water level measurements;
- operating the Air Sparging/SVE (AS/SVE) system;
- collecting split samples with USEPA on wells north of Yuma Road; and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

If you have any questions, please feel free to call me at (614) 841-4650.

Sincerely,

SHARP AND ASSOCIATES, INC.

Todd Struttmann, P.E.
Principal

cc: J. Sussman, Goodyear Tire & Rubber Company
K. Salyer, U.S. EPA
M. Bolitho, Arizona Department of Water Resources

5110/pgamnthly/2001/PGAJAN02

S. Zachary, Haley-Aldrich, Inc.
R. Bartholomew, Bartholomew Engineering

TO:	Nancy Lou Minkler, Remedial Project Manager Arizona Department of Environmental Quality (ADEQ)
FROM:	Jeff Sussman, Project Manager The Goodyear Tire & Rubber Company (GTRC)
SUBJECT:	January 2002 Monthly Progress Report, Phoenix-Goodyear Airport (PGA) Site in Goodyear, Arizona
DATE:	February 15, 2002

CURRENT ACTIVITIES

This monthly report describes PGA site activities conducted during January 2002. Notable activities are described below or detailed in the sections that follow. Activities this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual ground water samples and water level measurements;
- operating the Air Sparging/SVE (AS/SVE) system;
- collecting split samples with PGA North contractor (GeoMatrix) and sampling for perchlorate; and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

Trichloroethene (TCE) was detected in well COG#11 on December 19, 1997. GTRC agreed to continue sampling the well on a monthly basis until the Northern Subunit C delineation is complete and an extraction system in place. The sample collected from COG #11 on January 14, 2002 resulted in a detection at 1.1 µg/l for TCE.

OUTSTANDING ISSUES/RESOLUTIONS

To complete the extraction well network for capture of the Northern Subunit C plume, GTRC needs an additional extraction well north of Yuma Road. GTRC is working with the City of Goodyear for potential beneficial reuse of water from this additional extraction well. The City of Goodyear is pursuing access to this off site property.

PLANS FOR THE NEXT MONTH

Plans for February 2002 include:

- continuing operation of the Subunit A treatment system, the Northern Subunit C treatment system, and the Southern Subunit C treatment system;
- continuing operation of E-17 without chrome treatment and collecting samples of the extraction wells and system effluent to confirm compliance with the discharge permit;
- operating the infield AS/SVE system opening additional air sparge and SVE wells as necessary (plans are to turn on SVEI-3 and ASI-3);
- collecting a whole air sample of the AS/SVE system;
- continuing to pursue off site access for the proposed extraction well E-102;
- submitting to ADEQ the ground water modeling simulations that have been run for placement of E-102; and

- meeting with ADEQ and USEPA to discuss the status of the project (February 27, 2002).

Air Sparging/SVE in Infield

The SVE system was started up on November 29, 2001 and the air sparging commenced on November 30, 2001. Activities this month are summarized below.

- During January 2002, approximately 25 lbs of VOCs were removed from the system bringing the cumulative removal to ~135 lbs.
- Free product has not been observed in the wells monitored.
- The water levels in the AVGAS monitoring wells have changed less than 0.1 feet since startup.
- The initial whole air sample contained predominantly (>95%) petroleum hydrocarbons and limited TCE. SVE wells SVEI-2 and SVEI-4 are in operation while SVEI-1 and SVEI-3 are closed (December 12, 2001). This change has resulted in a decrease in VOC vapor concentrations since wells SVEI-2 and SVEI-4 are farther from the AVGAS plume.
- The sparging is being conducted in the well furthest from the AVGAS plume (ASI-2). The flow rate of ASI-2 was increased from 5 cfm to 10 cfm on January 29, 2002.
- The system operational uptime for January increased to 80% (up from 63% in the prior month).

CHROMIUM MANAGEMENT APPROACH

As part of the chrome management approach, well E-17 was placed on-line without chrome treatment on June 18, 2001 and weekly sampling commenced for 3 weeks and then reverted to monthly. The analytical results for the last five months are presented in the table below.

Extraction Well	8/9/01 CRT* (mg/L)	9/10/01 CRT* (mg/L)	10/12/01 CRT* (mg/L)	11/12/01 CRT* (mg/L)	12/14/01 CRT* (mg/L)	1/14/02 CRT* (mg/L)
NE-1	0.061	NA	0.062	NA	NA	NA
NE-2	0.033	NA	0.013	NA	NA	0.020
NE-3	0.015	NA	0.012	NA	NA	<0.005
NE-4	0.030	NA	0.027	NA	NA	0.015
NE-5	0.143	NA	0.123	NA	NA	0.112
E-7R	0.274	0.324	0.276	0.277	0.241	0.220
E-8	0.069	NA	NS	NA	NA	0.064
E-10	NS	0.17	<0.005	NA	NA	<0.005
E-11	0.034	NA	0.037	NA	NA	0.026
E-12	0.183	0.205	0.037	0.159	0.156	0.145
E-16	NS	NA	NS	NA	NA	NA
E-17	0.209	0.228	0.196	0.197	0.191	0.179
Air stripper Effluent predicted (a)	0.089	0.088	0.081	0.077	0.073	0.068
Air stripper Effluent actual	0.089	0.088	0.079	0.075	0.067	0.070

*CRT – total chromium results by method EPA 200.7

NS – not sampled due to well off line.
NA – not analyzed as per sampling program
(a) – the predicted effluent concentration is based on a mass weighted average from the individual extraction wells.

Based on the sample results, the chrome management approach can be conducted without an exceedance of the effluent standard of 0.100 mg/L. On August 27, 2001 representatives of ADEQ, USEPA, GTRC and SHARP held a conference call to discuss the status of the chrome management approach. All parties agreed that active chrome treatment is not needed. However, ADEQ and USEPA requested that the monitoring continue for a period of 12 months (through May 2002).

NORTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Northern Subunit C system continued during January 2002. A total of 5.0 million gallons (MG) of water was extracted. The system operated 25.9 days out of 31 days in January. The treatment system influent sample contained TCE at a concentration of 2.2 µg/L (1/14/02), yielding a calculated mass removal this month of 0.09 lbs. Total mass removed to date by the system is 18.83 lbs. TCE was detected in the sample collected between the carbon vessels at 1.5 µg/L.

The northern subunit C system was offline for 5.9 days in January due to faulty pressure transducers on the influent prefilter units and a faulty level transducer in extraction well E-101. After the bag filters were replaced, the transducers re-calibrated and E-101's level transducer was replaced, the system was restarted.

Production for January 2002 was as follows:

Wells **Injection Wells**	**Production (MG)**	**Average Rate (gpm)**	**Days On/Uptime Rate (days/gpm)**
I-101	*	*	25.9/*
I-102	*	*	25.9/*
Total Injected	*	*	25.9/*
Extraction wells			
E-101	2.3	51.5	**25.9/61.7**
GAC#2 **	2.7	53.6	**35/53.6**
Total Extracted	**5.0**	**105.1**	

* Injection well flow meter not operating correctly and is reporting full flow of >500 gpm
** Total flow based on 1/2/02. to 2/5/02

SOUTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

A total of 13.1 MG of water was extracted from the Southern Subunit C treatment system during January 2002. The system operated 31 days out of a possible 31 days. The January inlet sample contained TCE at 6.6 µg/L (1/14/02) yielding a calculated mass removal for TCE during January of 0.72 lbs. Total mass removed to date by the Southern Subunit C system is 147.41 lbs. The TCE result was <1.0 µg/L in the sample collected between the carbon vessels.

The table below shows the carbon change out history for the Southern Subunit C system:

Vessel Flow Configuration*	Operational Dates	Time to Detect TCE >5 µg/l**	Time Before Required Change out
A/B	Startup (10/94) –6/95	6 months	8 months
A'/B	6/95 – 12/95	3 months	6 months
A''/B	12/95 – 10/96	8 months	10 months
B/A''	10/96-1/22/97	1 month	3 months
A''/B'	1/22/97-10/30/97	9 months	10 months
B'/A'''	10/31/97 – 6/22/98	7 months	8 months
A'''/B''	6/22/98 – 8/25/99	12 months	14 months
B'''/A'''	8/25/99 – 10/4/00	13 months	13 months
A''''/B'''	10/4/00- 10/17/01	>11 months	12 months
B''''/A''''	10/17/01- present	>3 months	TBD

* Vessel contents A - virgin coal based carbon
B - virgin coal based carbon
A' - on site regenerated coal based carbon
A''- coconut based carbon (applies to A''', A'''')
B' - coconut based carbon (applies to B'', B''', and B'''')
** The detection limit is 1 µg/L; the action level is 5 µg/L detected between the vessels; detection at this level initiates the planning process for the next change out. Time is presented in months after change out.

Production for the Southern Subunit C system in January 2002 is as follows:

Extraction Wells	**Production (MG)**	**Average Rate(gpm)**	**Days On/Avg.Rate (days/gpm)**
E-201	9.0	201.6	31/201.6
E-202	4.1	91.8	31/91.8
E-203	0	0	0/0
Totals	**13.1**	**293.4**	**31/293.4**
Injection Wells	**Production (MG)**	**Average Rate(gpm)**	**Days On/Avg.Rate (days/gpm)**
I-201	4.9	109.7	31/109.7
I-202	4.3	93.3	31/93.3
I-203	3.5	78.4	31/78.4
Totals	**12.7**	**281.4**	**31/281.4**

SUBUNIT A TREATMENT SYSTEM OPERATION

A total of 19.0 MG of water was treated at the Subunit A system in January 2002. The Subunit A extraction system operated at an uptime rate of 425.6 gpm for 31 of 31 days this month. The treatment system influent sample contained TCE at a concentration of 118.0 µg/L (1/14/02) yielding a calculated mass removal of 18.71 lbs for the month of January. The cumulative total TCE mass removed by the Subunit A treatment system to date is 4,298.81 lbs. The TCE result was non-detect in the effluent sample taken from the air stripper tower at the Subunit A Treatment System at <1.0 µg/L.

Production for the Subunit A system in January 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate (gpm)	On time Days/Rate (gpm)
Total Extracted	**19.0**	**425.6**	**31/425.6**
Total Injected	**18.5**	**414.4**	**31/414.4**

- The differences between total extracted and total injection is due to evaporation across the air stripper and meter variances.

Performance Measurement Tracking Log
Project Manager Input Form

PERIOD COVERED: January 2002
DATE DUE: February 15, 2002

ADMINISTRATIVE INFORMATION:

1. Main Site Code: **41-0000-02**
1a. Facility Site Code:
2. Site Name **Phoenix Goodyear Airport (south)**
3. Project Manager: **Nancy Lou Minkler**
4. Funding Type: **CERCLA- consent decree required**

Technical Information

5. DEQ Site Visits (RPM & Hydro)	0	6. Meetings w/Ips	0
7. Public Meetings Held	0	8. Fact Sheets on a site	
9. Water Samples Taken (DEQ/EPA)	3 0	10. Water Samples Taken (IP)	30
11. Soil/Soil Gas Samples Taken (DEQ/EPA)		12. Soil/Soil Gas Samples Taken (IP)	0
13. Air Samples Taken (DEQ/EPA)	0	14. Air Sample Taken (IP)	0
15. Ground Water Wells Installed (DEQ) Date Installed ___/___/___		16. Ground Water Wells Installed (IP)	0
17. Soil Vapor Wells Installed (DEQ) Date Installed ___/___/___	0	18. Soil Vapor Wells Installed (IP) Date Installed ___/___/___	0
19. Abandoned Ground Water Wells Date Abandoned ___/___/____	0	20. Abandoned Other Wells Date Abandoned ___/___/___	0
21. Remedial Investigation (started) overall area and/or facilities (see comments).	0	22. Remedial Investigations (completed)	0
23. Date Risk Assessment Completed	0	24. Date Feasibility Study Underway ___/___/___	0
25. Date Feasibility Study Went Underway	0	26. Remedial Design 10% 30% 60%	100%
27. Construction Start Date ___/___/___	0	28. Technology Used: pump and treat for water (air stripper Subunit A/GAC for Subunit C), SVE for Soil	
29. Treatment Plant Start Date 12/89 Subunit A; 2/94 North Subunit C; 10/94 South Subunit C		30. Date Remedial Action Completed ___/___/___	
31. Gallons Water Treated (VOCs) Subunit A 19,000,000 Southern Subunit C 13,100,000 Northern Subunit C 5,000,000		32. Hazardous Substance Removed (VOCs) in GW Treatment	19.52

33. Gallons Water Treated (metals)	0	**34.** Hazardous Substance Removed (metals)	0
35. Gallons Water Treated (other)	0	**36.** Hazardous Substance Removed (other)	0 lbs
37. Tons Soil Treated On-Site 0 (tons) 1 cy = 1 ton	0	**38.** Tons Soil Taken Off-site	0 (tons)
39. Acres Remediated		**40.** End Use of Water - (reinjection)	
41. Estimated reject Completion Date		**42.** Actual Completion Date ___/___/___	

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March 15, 2002

Ms. Nancy Lou Minkler
Remedial Project Manager
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Subject: Transmittal of February 2002, Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site, Goodyear, Arizona

Dear Ms. Minkler:

Attached is the monthly progress report for February 2002, for the PGA site in Goodyear, Arizona. This report is being submitted on behalf of The Goodyear Tire & Rubber Company (GTRC) to fulfill the reporting requirements outlined in the consent decree. Activities conducted this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual ground water samples;
- operating the Air Sparging/SVE (AS/SVE) system;
- conducting meetings with ADEQ and City of Goodyear (COG) (week of February 25th); and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

If you have any questions, please feel free to call me at (614) 841-4650.

Sincerely,

SHARP AND ASSOCIATES, INC.

Todd Struttmann, P.E.
Principal

cc: J. Sussman, Goodyear Tire & Rubber Company
K. Salyer, U.S. EPA

5110/pgamnthly/2001/PGAFEB02

M. Bolitho, Arizona Department of Water Resources
S. Zachary, Haley-Aldrich, Inc.
M. Sarmiento, BEW Systems, Inc.
R. Bartholomew, Bartholomew Engineering

TO:	Nancy Lou Minkler, Remedial Project Manager Arizona Department of Environmental Quality (ADEQ)
FROM:	Jeff Sussman, Project Manager The Goodyear Tire & Rubber Company (GTRC)
SUBJECT:	February 2002 Monthly Progress Report, Phoenix-Goodyear Airport (PGA) Site in Goodyear, Arizona
DATE:	March 15, 2002

CURRENT ACTIVITIES

This monthly report describes PGA site activities conducted during February 2002. Notable activities are described below or detailed in the sections that follow. Activities this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual ground water samples;
- operating the Air Sparging/SVE (AS/SVE) system;
- conducting meetings with ADEQ and City of Goodyear (COG) (week of February 25th); and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

Trichloroethene (TCE) was detected in well COG#11 on December 19, 1997. GTRC agreed to continue sampling the well on a monthly basis until the Northern Subunit C delineation is complete and an extraction system in place. The sample collected from COG #11 on February 12, 2002 resulted in a detection at 1.1 µg/l for TCE.

OUTSTANDING ISSUES/RESOLUTIONS

To complete the extraction well network for capture of the Northern Subunit C plume, GTRC needs an additional extraction well north of Yuma Road. GTRC is working with the City of Goodyear for potential beneficial reuse of water from this additional extraction well. The City of Goodyear is pursuing access to this off site property.

PLANS FOR THE NEXT MONTH

Plans for March 2002 include:

- continuing operation of the Subunit A treatment system, the Northern Subunit C treatment system, and the Southern Subunit C treatment system;
- continuing operation of E-17 without chrome treatment and collecting samples of the extraction wells and system effluent to confirm compliance with the discharge permit;
- operating the infield AS/SVE system opening additional air sparge and SVE wells as necessary (plans are to turn on SVEI-3 and ASI-3);
- collecting a whole air sample of the AS/SVE system;
- continuing to pursue off site access for the proposed extraction well E-102; and
- submitting to ADEQ the ground water modeling simulations that have been run for placement of E-102 (March 11th);

Air Sparging/SVE in Infield

The SVE system was started up on November 29, 2001 and the air sparging commenced on November 30, 2001. Activities this month are summarized below.

- During February 2002, approximately 6 lbs of VOCs were removed from the system bringing the cumulative removal to ~141 lbs.
- Free product has not been observed in the wells monitored.
- On February 20th, 2002, air-sparge well ASI-3 was brought on-line at 5 cfm and vapor extraction well SVEI-3 was re-started. Additionally, flow to ASI-2 was increased from 5 cfm to 10 cfm.
- SVE well flow rates were balanced during the second half of this period to approximately 20 to 40 cfm from an additional air sparge well (ASI-3) being brought on-line.
- Additional laboratory analysis will be conducted to track any changes in the VOC concentrations as additional wells are brought on-line.
- The system operational uptime for February increased to 86% (up from 80% in the prior month).
- Concentrations of TCE in PMW-15 and PMW-16 have decreased slightly since startup. Due to its proximity, the addition of ASI-3 is anticipated to result in a decrease in TCE in PMW-16 in the coming months.
- ASI-1 and SVEI-1 are planned to be brought on-line during March 2002.

CHROMIUM MANAGEMENT APPROACH

As part of the chrome management approach, well E-17 was placed on-line without chrome treatment on June 18, 2001 and weekly sampling commenced for 3 weeks and then reverted to monthly. The analytical results for the last five months are presented in the table below.

Extraction Well	9/10/01 CRT* (mg/L)	10/12/01 CRT* (mg/L)	11/12/01 CRT* (mg/L)	12/14/01 CRT* (mg/L)	1/14/02 CRT* (mg/L)	2/12/02 CRT* (mg/L)
NE-1	NA	0.062	NA	NA	NA	NA
NE-2	NA	0.013	NA	NA	0.020	NA
NE-3	NA	0.012	NA	NA	<0.005	NA
NE-4	NA	0.027	NA	NA	0.015	NA
NE-5	NA	0.123	NA	NA	0.112	NA
E-7R	0.324	0.276	0.277	0.241	0.220	0.194
E-8	NA	NS	NA	NA	0.064	NA
E-10	0.17	<0.005	NA	NA	<0.005	NA
E-11	NA	0.037	NA	NA	0.026	NA
E-12	0.205	0.037	0.159	0.156	0.145	0.168
E-16	NA	NS	NA	NA	NA	NA
E-17	0.228	0.196	0.197	0.191	0.179	0.189
Air stripper Effluent predicted (a)	0.088	0.081	0.077	0.073	0.068	0.075
Air stripper Effluent actual	0.088	0.079	0.075	0.067	0.070	0.053

*CRT – total chromium results by method EPA 200.7

NS – not sampled due to well off line.
NA – not analyzed as per sampling program
(a) – the predicted effluent concentration is based on a mass weighted average from the individual extraction wells.

Based on the sample results, the chrome management approach can be conducted without an exceedance of the effluent standard of 0.100 mg/L. On August 27, 2001 representatives of ADEQ, USEPA, GTRC and SHARP held a conference call to discuss the status of the chrome management approach. All parties agreed that active chrome treatment is not needed. However, ADEQ and USEPA requested that the monitoring continue for a period of 12 months (through May 2002).

NORTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Northern Subunit C system continued during February 2002. A total of 4.8 million gallons (MG) of water was extracted. The system operated 28 days out of 28 days in February. The treatment system influent sample contained TCE at a concentration of 2.3 µg/L (2/12/02), yielding a calculated mass removal this month of 0.09 lbs. Total mass removed to date by the system is 18.92 lbs. TCE was detected in the sample collected between the carbon vessels at 1.7 µg/L.

Production for February 2002 was as follows:

Wells **Injection Wells**	**Production (MG)**	**Average Rate (gpm)**	**Days On/Uptime Rate (days/gpm)**
I-101	*	*	
I-102	*	*	
Total Injected	*	*	
Extraction wells			
E-101	2.6	64.5	
GAC#2 **	2.5	62.0	**28/62.0**
Total Extracted	**4.8**	**105.1**	

* Injection well flow meter not operating correctly and is reporting full flow of >500 gpm
** Total flow based on 2/5/02 to 3/5/02

SOUTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

A total of 10.5 MG of water was extracted from the Southern Subunit C treatment system during February 2002. The system operated 25 days out of a possible 28 days. The February inlet sample contained TCE at 6.7 µg/L (2/12/02) yielding a calculated mass removal for TCE during February of 0.59 lbs. Total mass removed to date by the Southern Subunit C system is 148.0 lbs. The TCE result was <1.0 µg/L in the sample collected between the carbon vessels.

The Southern Subunit C treatment system went offline February 19th due to interruptions of power caused by the local power company. At the time of the outage, the system shut down automatically and did not restart upon power restoration. The systems at PGA are not designed to restart

automatically following process upset. The system was manually restarted on February 22, 2002 when it was discovered to be offline during a site visit.

We will be adding additional PLC logic to the Airstripper PLC to monitor flow rate conditions at the Northern and Southern systems so that when a no flow condition occurs, the autodialer will automatically notify the local operator. This "no flow" condition can occur due to loss of plant power or equipment failure.

The table below shows the carbon change out history for the Southern Subunit C system:

Vessel Flow Configuration*	Operational Dates	Time to Detect TCE >5 µg/l**	Time Before Required Change out
A/B	Startup (10/94) –6/95	6 months	8 months
A'/B	6/95 – 12/95	3 months	6 months
A''/B	12/95 – 10/96	8 months	10 months
B/A''	10/96-1/22/97	1 month	3 months
A''/B'	1/22/97-10/30/97	9 months	10 months
B'/A'''	10/31/97 – 6/22/98	7 months	8 months
A'''/B''	6/22/98 – 8/25/99	12 months	14 months
B'''/A'''	8/25/99 – 10/4/00	13 months	13 months
A''''/B'''	10/4/00- 10/17/01	12 months	12 months
B''''/A''''	10/17/01- present	>4 months	TBD

* Vessel contents A - virgin coal based carbon
B - virgin coal based carbon
A' - on site regenerated coal based carbon
A''- coconut based carbon (applies to A''', A'''')
B' - coconut based carbon (applies to B'', B''', and B'''')
** The detection limit is 1 µg/L; the action level is 5 µg/L detected between the vessels; detection at this level initiates the planning process for the next change out. Time is presented in months after change out.

Production for the Southern Subunit C system in February 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate(gpm)	Days On/Avg.Rate (days/gpm)
E-201	7.1	176.1	25/197.2
E-202	3.4	84.3	25/94.4
E-203			
Totals	**10.5**	**260.4**	**25/291.7**
Injection Wells	**Production (MG)**	**Average Rate(gpm)**	**Days On/Avg.Rate (days/gpm)**
I-201	3.9	96.7	25/108.3
I-202	3.6	89.3	25/100.0
I-203	2.7	67.0	25/75.0
Totals	**10.2**	**253.0**	**25/283.3**

SUBUNIT A TREATMENT SYSTEM OPERATION

A total of 16.5 MG of water was treated at the Subunit A system in February 2002. The Subunit A extraction system operated at an uptime rate of 409.2 gpm for 28 of 28 days this month. The treatment system influent sample contained TCE at a concentration of 140.0 µg/L (2/12/02) yielding a calculated mass removal of 19.28 lbs for the month of February. The cumulative total TCE mass removed by the Subunit A treatment system to date is 4,318.06 lbs. The TCE result was non-detect in the effluent sample taken from the air stripper tower at the Subunit A Treatment System at <1.0 µg/L.

Production for the Subunit A system in February 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate (gpm)	On time Days/Rate (gpm)
Total Extracted	**16.5**	**409.2**	**28/409.2**
Total Injected	**16.0**	**396.8**	**28/396.8**

- The differences between total extracted and total injection is due to evaporation across the air stripper and meter variances.

Performance Measurement Tracking Log
Project Manager Input Form

PERIOD COVERED: February 2002
DATE DUE: March 15, 2002

ADMINISTRATIVE INFORMATION:

1. Main Site Code: **41-0000-02**
1a. Facility Site Code:
2. Site Name **Phoenix Goodyear Airport (south)**
3. Project Manager: **Nancy Lou Minkler**
4. Funding Type: **CERCLA- consent decree required**

Technical Information

5. DEQ Site Visits (RPM & Hydro)	0	6. Meetings w/Ips	0
7. Public Meetings Held	0	8. Fact Sheets on a site	
9. Water Samples Taken (DEQ/EPA)	3 0	10. Water Samples Taken (IP)	30
11. Soil/Soil Gas Samples Taken (DEQ/EPA)		12. Soil/Soil Gas Samples Taken (IP)	0
13. Air Samples Taken (DEQ/EPA)	0	14. Air Sample Taken (IP)	0
15. Ground Water Wells Installed (DEQ) Date Installed ___/___/___		16. Ground Water Wells Installed (IP)	0
17. Soil Vapor Wells Installed (DEQ) Date Installed ___/___/___	0	18. Soil Vapor Wells Installed (IP) Date Installed ___/___/___	0
19. Abandoned Ground Water Wells Date Abandoned ___/___/___	0	20. Abandoned Other Wells Date Abandoned ___/___/___	0
21. Remedial Investigation (started) overall area and/or facilities (see comments).	0	22. Remedial Investigations (completed)	0
23. Date Risk Assessment Completed	0	24. Date Feasibility Study Underway ___/___/___	0
25. Date Feasibility Study Went Underway	0	26. Remedial Design 10% 30% 60%	100%
27. Construction Start Date ___/___/___	0	28. Technology Used: pump and treat for water (air stripper Subunit A/GAC for Subunit C), SVE for Soil	
29. Treatment Plant Start Date 12/89 Subunit A; 2/94 North Subunit C; 10/94 South Subunit C		30. Date Remedial Action Completed ___/___/___	
31. Gallons Water Treated (VOCs) Subunit A 16,500,000 Southern Subunit C 10,500,000 Northern Subunit C 4,800,000		32. Hazardous Substance Removed (VOCs) in GW Treatment	19.96

33. Gallons Water Treated (metals)	0	**34.** Hazardous Substance Removed (metals)	0
35. Gallons Water Treated (other)	0	**36.** Hazardous Substance Removed (other)	0 lbs
37. Tons Soil Treated On-Site 0 (tons) 1 cy = 1 ton	0	**38.** Tons Soil Taken Off-site	0 (tons)
39. Acres Remediated		**40.** End Use of Water - (reinjection)	
41. Estimated reject Completion Date		**42.** Actual Completion Date ___/___/___	

SHARP
AND ASSOCIATES, INC.
Environmental Engineers,
Scientists, and Contractors

982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
FAX. (614) 841-4660

April 15, 2002

Ms. Nancy Lou Minkler
Remedial Project Manager
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Subject: Transmittal of March 2002, Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site, Goodyear, Arizona

Dear Ms. Minkler:

Attached is the monthly progress report for March 2002, for the PGA site in Goodyear, Arizona. This report is being submitted on behalf of The Goodyear Tire & Rubber Company (GTRC) to fulfill the reporting requirements outlined in the Consent Decree. Activities conducted this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual groundwater samples;
- operating the Air Sparging/SVE (AS/SVE) system;
- submitting to ADEQ the groundwater modeling simulations that have been run for placement of E-102 (March 11th); and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

If you have any questions, please feel free to call me at (614) 841-4650.

Sincerely,

SHARP AND ASSOCIATES, INC.

Todd Struttmann, P.E.
Principal

cc: J. Sussman, Goodyear Tire & Rubber Company
K. Salyer, U.S. EPA

5110/pgamnthly/2001/PGAMARCH02

M. Bolitho, Arizona Department of Water Resources
S. Zachary, Haley-Aldrich, Inc.
M. Sarmiento, BEW Systems, Inc.
R. Bartholomew, Bartholomew Engineering

TO:	Nancy Lou Minkler, Remedial Project Manager Arizona Department of Environmental Quality (ADEQ)
FROM:	Jeff Sussman, Project Manager The Goodyear Tire & Rubber Company (GTRC)
SUBJECT:	March 2002 Monthly Progress Report, Phoenix-Goodyear Airport (PGA) Site in Goodyear, Arizona
DATE:	April 15, 2002

CURRENT ACTIVITIES

This monthly report describes PGA site activities conducted during March 2002. Notable activities are described below or detailed in the sections that follow. Activities this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual groundwater samples;
- operating the Air Sparging/SVE (AS/SVE) system ;
- submitting to ADEQ the groundwater modeling simulations that have been run for placement of E-102 (March 11th); and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

Trichloroethene (TCE) was detected in well COG#11 on December 19, 1997. GTRC agreed to continue sampling the well on a monthly basis until the Northern Subunit C delineation is complete and an extraction system in place. The sample collected from COG #11 on March 13, 2002 resulted in a non-detect at <1.0 µg/l for TCE.

OUTSTANDING ISSUES/RESOLUTIONS

To complete the extraction well network for capture of the Northern Subunit C plume, GTRC needs an additional extraction well north of Yuma Road. GTRC is working with the City of Goodyear for potential beneficial reuse of water from this additional extraction well. The City of Goodyear is pursuing access to this off-site property.

PLANS FOR THE NEXT MONTH

Plans for April 2002 include:

- continuing operation of the Subunit A treatment system, the Northern Subunit C treatment system, and the Southern Subunit C treatment system;
- continuing operation of E-17 without chrome treatment and collecting samples of the extraction wells and system effluent to confirm compliance with the discharge permit;
- collecting a whole air sample from the SVE inlet;
- adding operation of ASI-1 and SVEI-1 to the SVE /Air Sparge system;
- continuing to pursue off site access for the proposed extraction well E-102; and
- participating in a project status meeting with ADEQ (April 3rd).

Air Sparging/SVE in Infield

The SVE system was started up on November 29, 2001 and the air sparging commenced on November 30, 2001. Activities this month are summarized below.

- During March 2002, approximately 6 lbs of VOCs were removed from the system bringing the cumulative removal to ~120 lbs.
- Free product has not been observed in the wells monitored.
- On February 20, 2002, air-sparge well ASI-3 was brought on-line at 5 cfm and vapor extraction well SVEI-3 was re-started. Additionally, flow to ASI-2 was increased from 5 cfm to 10 cfm.
- The regulator for ASI-1 upon startup was inoperable and was replaced. Startup of this well is scheduled for mid-April 2002.
- The system operational uptime for March 2002 was 100%.
- The analytical results from the February 27, 2002 sampling did not show any significant change in concentration in PMW-15 or PMW-16. When ASI-1 is brought on-line and ASI-3 flow rates are increased, these concentrations are anticipated to decrease as VOCs are sparged from the ground water.
- ASI-1 and SVEI-1 will be brought on-line in April 2002.
- A whole air sample will be collected in April 2002.

CHROMIUM MANAGEMENT APPROACH

As part of the chrome management approach, well E-17 was placed on-line without chrome treatment on June 18, 2001 and weekly sampling commenced for 3 weeks and then reverted to monthly. The analytical results for the last five months are presented in the table below.

Extraction Well	9/10/01 CRT* (mg/L)	10/12/01 CRT* (mg/L)	11/12/01 CRT* (mg/L)	12/14/01 CRT* (mg/L)	1/14/02 CRT* (mg/L)	2/12/02 CRT* (mg/L)	3/13/02 CRT* (mg/L)	3/19/02 CRT* (mg/L)
NE-1	NA	0.062	NA	NA	NA	NA	NA	NA
NE-2	NA	0.013	NA	NA	0.020	NA	NA	NA
NE-3	NA	0.012	NA	NA	<0.005	NA	NA	NA
NE-4	NA	0.027	NA	NA	0.015	NA	NA	NA
NE-5	NA	0.123	NA	NA	0.112	NA	NA	NA
E-7R	0.324	0.276	0.277	0.241	0.220	0.194	0.178	0.226
E-8	NA	NS	NA	NA	0.064	NA	NA	NA
E-10	0.17	<0.005	NA	NA	<0.005	NA	NA	NA
E-11	NA	0.037	NA	NA	0.026	NA	NA	NA
E-12	0.205	0.037	0.159	0.156	0.145	0.168	0.131	0.146
E-16	NA	NS	NA	NA	NA	NA	NA	NA
E-17	0.228	0.196	0.197	0.191	0.179	0.189	0.159	0.190
Air stripper Effluent predicted (a)	0.088	0.081	0.077	0.073	0.068	0.075	0.068	0.062
Air stripper Effluent actual	0.088	0.079	0.075	0.067	0.070	0.053	0.059	0.067

*CRT – total chromium results by method EPA 200.7. All the samples were digested prior to analysis as required by the method.
NS – not sampled due to well off line.
NA – not analyzed as per sampling program
(a) – the predicted effluent concentration is based on a mass weighted average from the individual extraction wells

Based on the sample results, the chrome management approach can be conducted without an exceedance of the effluent standard of 0.100 mg/L. ADEQ and USEPA requested that the monitoring continue for a period of 12 months (through May 2002).

On March 25th through 29th SHARP was on-site to prepare for the decommissioning of the AACR chrome removal system. The aliquot of acid and caustic in the mix tanks that are used in the treatment operations was diluted and injected inline to the AST with the waters from E-17. The acid and caustic derived waste from the removal operations was solidified and containerized in 55-gallon drums. The AACR resin unit was emptied and containerized. The cone bottom settling a tank was partially dismantled to access the sludges from past regeneration. This waste was containerized for future shipment off-site. All containerized wastes were sampled for analysis. Upon receipt of analysis the waste will be shipped off-site. Full decommissioning will be conducted after receipt of the May chromium results and concurrence with ADEQ.

NORTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Northern Subunit C system continued during March 2002. A total of 6.3 million gallons (MG) of water was extracted. The system operated 26.25 days out of 31 days in March. The treatment system influent sample contained TCE at a concentration of 2.2 µg/L (3/13/02), yielding a calculated mass removal this month of 0.12 lbs. Total mass removed to date by the system is 19.04 lbs. TCE was detected in the sample collected between the carbon vessels at 1.3 µg/L.

The Northern system was offline for 4.75 days in March due to a fault of the system programmable logic controller (PLC) on March 6, 2002. When this processor faulted the system operation program was erased and had to be reloaded. The program was reloaded on March 11, 2002 and the system was returned to normal operation. ADEQ was notified both verbally and in writing of the shutdown (letter March 11, 2002) as required by the Consent Decree.

Production for March 2002 was as follows:

Wells **Injection Wells**	**Production (MG)**	**Average Rate (gpm)**	**Days On/Uptime Rate (days/gpm)**
I-101	*	*	26.25
I-102	*	*	26.25
Total Injected	*	*	**26.25**
Extraction wells			
E-101	3.2	71.6	**26.25/84.7**
GAC#2 **	3.1	69.4	**34/63.3**
Total Extracted	**6.3**	**141**	

* Injection well flow meter not operating correctly and is reporting erroneous data
** Total flow based on 3/5/02 to 4/8/02

SOUTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

A total of 13.7 MG of water was extracted from the Southern Subunit C treatment system during March 2002. The system operated 31 days out of a possible 31 days. The March inlet sample contained TCE at 5.9 µg/L (3/13/02) yielding a calculated mass removal for TCE during March of 0.67 lbs. Total mass removed to date by the Southern Subunit C system is 148.67 lbs. The TCE result was <1.0 µg/L in the sample collected between the carbon vessels.

The table below shows the carbon change out history for the Southern Subunit C system:

Vessel Flow Configuration*	Operational Dates	Time to Detect TCE >5 µg/l**	Time Before Required Change out
A/B	Startup (10/94) –6/95	6 months	8 months
A'/B	6/95 – 12/95	3 months	6 months
A''/B	12/95 – 10/96	8 months	10 months
B/A''	10/96-1/22/97	1 month	3 months
A''/B'	1/22/97-10/30/97	9 months	10 months
B'/A'''	10/31/97 – 6/22/98	7 months	8 months
A'''/B''	6/22/98 – 8/25/99	12 months	14 months
B'''/A'''	8/25/99 – 10/4/00	13 months	13 months
A''''/B'''	10/4/00- 10/17/01	12 months	12 months
B''''/A''''	10/17/01- present	>5 months	TBD

* Vessel contents A - virgin coal based carbon
B - virgin coal based carbon
A' - on site regenerated coal based carbon
A''- coconut based carbon (applies to A''', A'''')
B' - coconut based carbon (applies to B'', B''', and B'''')
** The detection limit is 1 µg/L; the action level is 5 µg/L detected between the vessels; detection at this level initiates the planning process for the next change out. Time is presented in months after change out.

Production for the Southern Subunit C system in March 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate(gpm)	Days On/Avg.Rate (days/gpm)
E-201	9.4	210.6	31/210.6
E-202	4.3	96.2	31/96.2
E-203	0	0	0/0
Totals	**13.7**	**306.8**	**31/306.8**
Injection Wells	**Production (MG)**	**Average Rate(gpm)**	**Days On/Avg.Rate (days/gpm)**
I-201	4.9	109.8	31/109.8
I-202	4.8	107.5	31/107.5
I-203	3.5	78.4	31/78.4
Totals	**13.2**	**295.7**	**31/295.7**

SUBUNIT A TREATMENT SYSTEM OPERATION

A total of 20.6 MG of water was treated at the Subunit A system in March 2002. The Subunit A extraction system operated at an uptime rate of 461.5 gpm for 31 of 31 days this month. The treatment system influent sample contained TCE at a concentration of 110.0 µg/L (3/13/02) yielding a calculated mass removal of 18.91 lbs for the month of March. The cumulative total TCE mass removed by the Subunit A treatment system to date is 4,336.97 lbs. The TCE result was non-detect in the effluent sample taken from the air stripper tower at the Subunit A Treatment System at <1.0 µg/L.

Production for the Subunit A system in March 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate (gpm)	On time Days/Rate (gpm)
Total Extracted	**20.6**	**461.5**	**31/461.5**
Total Injected	**19.9**	**445.8**	**31/445.8**

- The differences between total extracted and total injection is due to evaporation across the air stripper and meter variances.

SHARP
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Environmental Engineers,
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982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
FAX (614) 841-4660

May 15, 2002

Ms. Nancy Lou Minkler
Remedial Project Manager
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Subject: Transmittal of April 2002, Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site, Goodyear, Arizona

Dear Ms. Minkler:

Attached is the monthly progress report for April 2002, for the PGA site in Goodyear, Arizona. This report is being submitted on behalf of The Goodyear Tire & Rubber Company (GTRC) to fulfill the reporting requirements outlined in the Consent Decree. Activities conducted this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual groundwater samples;
- operating the Air Sparging/SVE (AS/SVE) system ;
- collecting a whole air sample from the SVE inlet;
- adding operation of ASI-1 and SVEI-1 to the SVE /Air Sparge system; and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

If you have any questions, please feel free to call me at (614) 841-4650.

Sincerely,

SHARP AND ASSOCIATES, INC.

Todd Struttmann, P.E.
Principal

cc: J. Sussman, Goodyear Tire & Rubber Company
K. Salyer, U.S. EPA

5110/pgamnthly/2001/PGAAPRIL02

M. Bolitho, Arizona Department of Water Resources
S. Zachary, Haley-Aldrich, Inc.
M. Sarmiento, BEW Systems, Inc.
R. Bartholomew, Bartholomew Engineering

TO:	Nancy Lou Minkler, Remedial Project Manager Arizona Department of Environmental Quality (ADEQ)
FROM:	Jeff Sussman, Project Manager The Goodyear Tire & Rubber Company (GTRC)
SUBJECT:	April 2002 Monthly Progress Report, Phoenix-Goodyear Airport (PGA) Site in Goodyear, Arizona
DATE:	May 15, 2002

CURRENT ACTIVITIES

This monthly report describes PGA site activities conducted during April 2002. Notable activities are described below or detailed in the sections that follow. Activities this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual groundwater samples;
- operating the Air Sparging/SVE (AS/SVE) system ;
- participating in a project status meeting with ADEQ (April 3rd);
- adding operation of ASI-1 and SVEI-1 to the SVE /Air Sparge system
- increasing sparging rates of ASI-1 and ASI-3; and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

Trichloroethene (TCE) was detected in well COG#11 on December 19, 1997. GTRC agreed to continue sampling the well on a monthly basis until the Northern Subunit C delineation is complete and an extraction system in place. The sample collected from COG #11 on April11, 2002 resulted in a non-detect at <1.0 µg/l for TCE.

OUTSTANDING ISSUES/RESOLUTIONS

To complete the extraction well network for capture of the Northern Subunit C plume, GTRC needs an additional extraction well north of Yuma Road. GTRC is working with the City of Goodyear for potential beneficial reuse of water from this additional extraction well. The City of Goodyear is pursuing access to this off-site property.

PLANS FOR THE NEXT MONTH

Plans for May 2002 include:

- continuing operation of the Subunit A treatment system, the Northern Subunit C treatment system, and the Southern Subunit C treatment system;
- continuing operation of E-17 without chrome treatment and collecting samples of the extraction wells and system effluent to confirm compliance with the discharge permit;
- collecting a round of water level measurements (PGA north will record their water levels the same timeframe during the week of May 13th)
- continuing to pursue off site access for the proposed extraction well E-102; and
- collecting a whole air sample from the SVE inlet.

Air Sparging/SVE in Infield

The SVE system was started up on November 29, 2001 and the air sparging commenced on November 30, 2001. Activities this month are summarized below.

- During April 2002, approximately 8 lbs of VOCs were removed from the system bringing the cumulative removal to ~ 108 lbs (note the cumulative mass has been recalculated).
- Free product has not been observed in the wells monitored.
- On April 23, 2002, SVE well SVEI-1 was turned on at 50 cfm; ASI-1 was turned on at 5 cfm. Additionally, ASI-3 was increased from 5 cfm to 10 cfm and ASI-2 was increased from 10 cfm to 15 cfm. These increases are part of the overall ramping up of the system.
- The system operational uptime for April 2002 was 100% bringing the cumulative uptime to 92%.
- The analytical results from the February 27, 2002 sampling did not show any significant change in concentration in PMW-15 or PMW-16. However, during April ASI-1 was brought on-line and ASI-3 flow rates were increased. The concentrations in PMW-15 and PMW-16 are anticipated to decrease as VOCs are sparged from the ground water.
- A whole air sample will be collected in May 2002.

CHROMIUM MANAGEMENT APPROACH

As part of the chrome management approach, well E-17 was placed on-line without chrome treatment on June 18, 2001 and weekly sampling commenced for 3 weeks and then reverted to monthly. The analytical results for the last five months are presented in the table below.

Extraction Well	11/12/01 CRT* (mg/L)	12/14/01 CRT* (mg/L)	1/14/02 CRT* (mg/L)	2/12/02 CRT* (mg/L)	3/13/02 CRT* (mg/L)	3/19/02 CRT* (mg/L)	4/11/02 CRT* (mg/L)
NE-1	NA	NA	NA	NA	NA	NA	NS
NE-2	NA	NA	0.020	NA	NA	NA	0.042
NE-3	NA	NA	<0.005	NA	NA	NA	0.015
NE-4	NA	NA	0.015	NA	NA	NA	0.031
NE-5	NA	NA	0.112	NA	NA	NA	0.139
E-7R	0.277	0.241	0.220	0.194	0.178	0.226	0.283
E-8	NA	NA	0.064	NA	NA	NA	0.063
E-10	NA	NA	<0.005	NA	NA	NA	0.009
E-11	NA	NA	0.026	NA	NA	NA	0.038
E-12	0.159	0.156	0.145	0.168	0.131	0.146	0.208
E-16	NA	NA	NA	NA	NA	NA	NS
E-17	0.197	0.191	0.179	0.189	0.159	0.190	0.224
Air stripper Effluent predicted (a)	0.077	0.073	0.068	0.075	0.068	0.062	0.104
Air stripper Effluent actual	0.075	0.067	0.070	0.053	0.059	0.067	0.102

*CRT – total chromium results by method EPA 200.7. All the samples were digested prior to analysis as required by the method.
NS – not sampled due to well off line.

NA – not analyzed as per sampling program
(a) – the predicted effluent concentration is based on a mass weighted average from the individual extraction wells.

The chromium concentrations at several of the wells (E-7r, E-12 and E-17) increased slightly during the April monthly sampling event. Also in April, pumping rates from Subunit A extraction wells were increased (for both the low and high concentrated wells). This combination resulted in an exceedance of the chromium discharge limit in April. The chromium result for the air stripper effluent on April 11, 2002 (0.102 μg/L) was above the clean-up standard of 0.100 μg/L. Flow rates of individual wells are adjusted based on mass loading modeling to maintain compliance for chromium. Following receipt of the April 11, 2002 results, well flow rates with historically high concentrations for CRT were decreased (E-7R, E-12, and E-17) and wells with low concentrations were increased (NE-2, NE-3, NE-4, E-8, E-10 and E-11). Note this is the only exceedance for chromium since implementing the chrome management program and does not change the overall philosophy or efficacy of the program.

NORTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Northern Subunit C system continued during April 2002. A total of 6.3 million gallons (MG) of water was extracted. The system operated 30 days out of 30 days in April. The treatment system influent sample contained TCE at a concentration of 1.4 μg/L (4/11/02), yielding a calculated mass removal this month of 0.07 lbs. Total mass removed to date by the system is 19.11 lbs. TCE was detected in the sample collected between the carbon vessels at 1.5 μg/L.

The Northern system was offline for 1 hr due to a momentary power outage. Following restoration of power the system was restarted.

Production for April 2002 was as follows:

Wells **Injection Wells**	**Production (MG)**	**Average Rate (gpm)**	**Days On/Uptime Rate (days/gpm)**
I-101	*	*	
I-102	*	*	
Total Injected	*	*	**20/65**
Extraction wells			
E-101	2.8	64.8	**30/64.8**
GAC#2 **	3.5	81.0	**27/90.0**
Total Extracted	**6.3**		

* Injection well flow meter not operating correctly and is reporting erroneous data
** Total flow based on 4/8/02 to 5/8/02

SOUTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

A total of 10.7 MG of water was extracted from the Southern Subunit C treatment system during April 2002. The system operated 26.9 days out of a possible 30 days. The April inlet sample contained TCE at 7.4 µg/L (4/16/02) yielding a calculated mass removal for TCE during April of 0.66 lbs. Total mass removed to date by the Southern Subunit C system is 149.33 lbs. The TCE result was <1.0 µg/L in the sample collected between the carbon vessels.

The Southern system was offline for 3.1 days due to a momentary power outage on 4/26/02. The system was found to be offline during the daily telemetry check on 4/29/02 when the plant operator was alerted of the status of the system. The systems alarm dialer system was not activated from the outage and therefore did not notify the plant operator. Additional programming was completed to allow an alarm dial out from the dialer following a power interruption at all 3 plants (Northern, Southern, and Air Stripper).

The table below shows the carbon change out history for the Southern Subunit C system:

Vessel Flow Configuration*	Operational Dates	Time to Detect TCE >5 µg/l**	Time Before Required Change out
A/B	Startup (10/94) –6/95	6 months	8 months
A'/B	6/95 – 12/95	3 months	6 months
A''/B	12/95 – 10/96	8 months	10 months
B/A''	10/96-1/22/97	1 month	3 months
A''/B'	1/22/97-10/30/97	9 months	10 months
B'/A'''	10/31/97 – 6/22/98	7 months	8 months
A'''/B''	6/22/98 – 8/25/99	12 months	14 months
B'''/A'''	8/25/99 – 10/4/00	13 months	13 months
A''''/B'''	10/4/00- 10/17/01	12 months	12 months
B''''/A''''	10/17/01- present	>6 months	TBD

* Vessel contents A - virgin coal based carbon
B - virgin coal based carbon
A' - on site regenerated coal based carbon
A''- coconut based carbon (applies to A''', A'''')
B' - coconut based carbon (applies to B'', B''', and B'''')
** The detection limit is 1 µg/L; the action level is 5 µg/L detected between the vessels; detection at this level initiates the planning process for the next change out. Time is presented in months after change out.

Production for the Southern Subunit C system in April 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate(gpm)	Days On/Avg.Rate (days/gpm)
E-201	6.8	157.4	26.9/175.5
E-202	3.9	90.3	26.9/87.4
E-203			
Totals	**10.7**	**247.7**	**26.9/276.2**
Injection	**Production (MG)**	**Average Rate(gpm)**	**Days On/Avg.Rate**

Wells			(days/gpm)
I-201	4.0	92.6	103.3
I-202	3.8	88.0	26.9/98.1
I-203	2.5	57.9	26.9/64.5
Totals	**10.3**	**238.4**	**26.9/265.9**

SUBUNIT A TREATMENT SYSTEM OPERATION

A total of 22.5 MG of water was treated at the Subunit A system in April 2002. The Subunit A extraction system operated at an uptime rate of 520.8 gpm for 30 of 30 days this month. Note that the average system flow rate was increased by 60 gpm over the prior month. This increase is part of the optimization of the wells to continue to produce the wells at their maximum to shorten the time for cleanup.

The treatment system influent sample contained TCE at a concentration of 100.0 µg/L (4/16/02) yielding a calculated mass removal of 18.78 lbs for the month of April. The cumulative total TCE mass removed by the Subunit A treatment system to date is 4,355.75 lbs. The TCE result was non-detect in the effluent sample taken from the air stripper tower at the Subunit A Treatment System at <1.0 µg/L.

Production for the Subunit A system in April 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate (gpm)	On time Days/Rate (gpm)
Total Extracted	**22.5**	**520.8**	**30/520.8**
Total Injected	**21.6**	**500.0**	**30/500.0**

- The differences between total extracted and total injection is due to evaporation across the air stripper and meter variances.

Performance Measurement Tracking Log
Project Manager Input Form

PERIOD COVERED: April 2002
DATE DUE: May 15, 2002

ADMINISTRATIVE INFORMATION:

1. Main Site Code: **41-0000-02**
1a. Facility Site Code:
2. Site Name **Phoenix Goodyear Airport (south)**
3. Project Manager: **Nancy Lou Minkler**
4. Funding Type: **CERCLA- consent decree required**

Technical Information

5. DEQ Site Visits (RPM & Hydro)	0	6. Meetings w/Ips	0
7. Public Meetings Held	0	8. Fact Sheets on a site	
9. Water Samples Taken (DEQ/EPA)	3 0	10. Water Samples Taken (IP)	30
11. Soil/Soil Gas Samples Taken (DEQ/EPA)		12. Soil/Soil Gas Samples Taken (IP)	0
13. Air Samples Taken (DEQ/EPA)	0	14. Air Sample Taken (IP)	0
15. Ground Water Wells Installed (DEQ) Date Installed ___/___/___		16. Ground Water Wells Installed (IP)	0
17. Soil Vapor Wells Installed (DEQ) Date Installed ___/___/___	0	18. Soil Vapor Wells Installed (IP) Date Installed ___/___/___	0
19. Abandoned Ground Water Wells Date Abandoned ___/___/____	0	20. Abandoned Other Wells Date Abandoned ___/___/___	0
21. Remedial Investigation (started) overall area and/or facilities (see comments).	0	22. Remedial Investigations (completed)	0
23. Date Risk Assessment Completed	0	24. Date Feasibility Study Underway ___/___/___	0
25. Date Feasibility Study Went Underway	0	26. Remedial Design 10% 30% 60%	100%
27. Construction Start Date ___/___/___	0	28. Technology Used: pump and treat for water (air stripper Subunit A/GAC for Subunit C), SVE for Soil	
29. Treatment Plant Start Date 12/89 Subunit A; 2/94 North Subunit C; 10/94 South Subunit C		30. Date Remedial Action Completed ___/___/___	
31. Gallons Water Treated (VOCs) Subunit A 22,500,000 Southern Subunit C 10,700,000 Northern Subunit C 6,300,000		32. Hazardous Substance Removed (VOCs) in GW Treatment	19.51

33. Gallons Water Treated (metals)	0	**34.** Hazardous Substance Removed (metals)	0
35. Gallons Water Treated (other)	0	**36.** Hazardous Substance Removed (other)	0 lbs
37. Tons Soil Treated On-Site 0 (tons) 1 cy = 1 ton	0	**38.** Tons Soil Taken Off-site	0 (tons)
39. Acres Remediated		**40.** End Use of Water - (reinjection)	
41. Estimated reject Completion Date		**42.** Actual Completion Date ___/___/___	

SHARP Environmental
Engineers and Scientists
AND ASSOCIATES, INC.

982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
Fax (614) 841-4660

June 15, 2002

Ms. Nancy Lou Minkler
Remedial Project Manager
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Subject: Transmittal of May 2002, Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site, Goodyear, Arizona

Dear Ms. Minkler:

Attached is the monthly progress report for May 2002, for the PGA site in Goodyear, Arizona. This report is being submitted on behalf of The Goodyear Tire & Rubber Company (GTRC) to fulfill the reporting requirements outlined in the Consent Decree. Activities conducted this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual groundwater samples;
- collecting a round of water level measurements (PGA north recorded their water levels the same timeframe during the week of May 13th)
- receiving concurrence from the site landowner to replace the faulty cable to extraction well NE-1 so that well can be placed back into service;
- receiving a request from USEPA to split samples on 10 wells at the PGA south site (GTRC responded favorably and the sampling is scheduled for mid-June 2002);
- operating the Air Sparging/SVE (AS/SVE) system;
- collecting a whole air sample from the SVE inlet;
- increasing sparging rates of ASI-1 and ASI-3;
- sampling PMW-15 and PMW-16 to evaluate progress of the sparging; and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

If you have any questions, please feel free to call me at (614) 841-4650.

Sincerely,

SHARP AND ASSOCIATES, INC.

Todd Struttmann, P.E.
Principal

cc: J. Sussman, Goodyear Tire & Rubber Company
~~K. Salyer, U.S. EPA~~
M. Bolitho, Arizona Department of Water Resources
S. Zachary, Haley-Aldrich, Inc.
M. Sarmiento, BEW Systems, Inc.
R. Bartholomew, Bartholomew Engineering

TO:	Nancy Lou Minkler, Remedial Project Manager Arizona Department of Environmental Quality (ADEQ)
FROM:	Jeff Sussman, Project Manager The Goodyear Tire & Rubber Company (GTRC)
SUBJECT:	May 2002 Monthly Progress Report, Phoenix-Goodyear Airport (PGA) Site in Goodyear, Arizona
DATE:	June 15, 2002

CURRENT ACTIVITIES

This monthly report describes PGA site activities conducted during May 2002. Notable activities are described below or detailed in the sections that follow. Activities this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual groundwater samples;
- collecting a round of water level measurements (PGA north recorded their water levels the same timeframe during the week of May 13th)
- receiving concurrence from the site landowner to replace the faulty cable to extraction well NE-1 so that well can be placed back into service;
- receiving a request from USEPA to split samples on 10 wells at the PGA south site (GTRC responded favorably and the sampling is scheduled for mid-June 2002);
- operating the Air Sparging/SVE (AS/SVE) system;
- collecting a whole air sample from the SVE inlet;
- increasing sparging rates of ASI-1 and ASI-3;
- sampling PMW-15 and PMW-16 to evaluate progress of the sparging; and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

Trichloroethene (TCE) was detected in well COG#11 on December 19, 1997. GTRC agreed to continue sampling the well on a monthly basis until the Northern Subunit C delineation is complete and an extraction system in place. The sample collected from COG #11 on May 9, 2002 resulted in a non-detect at <1.0 µg/l for TCE.

OUTSTANDING ISSUES/RESOLUTIONS

To complete the extraction well network for capture of the Northern Subunit C plume, GTRC needs an additional extraction well north of Yuma Road. GTRC is working with the City of Goodyear for potential beneficial reuse of water from this additional extraction well. The City of Goodyear is pursuing access to this off-site property.

PLANS FOR THE NEXT MONTH

Plans for June 2002 include:

- continuing operation of the Subunit A treatment system, the Northern Subunit C treatment system, and the Southern Subunit C treatment system;

- continuing operation of E-17 without chrome treatment and collecting samples of the extraction wells and system effluent to confirm compliance with the discharge permit;
- continuing to pursue off site access for the proposed extraction well E-102; and;
- further increasing the sparging rates of the SVE system.

Air Sparging/SVE in Infield

The SVE system was started up on November 29, 2001 and the air sparging commenced on November 30, 2001. Activities this month are summarized below.

- During May 2002, approximately 7 lbs of VOCs were removed from the system bringing the cumulative removal to ~ 108 lbs (note the cumulative mass was recalculated in May).
- Free product has not been observed in the wells monitored.
- On May 31, 2002, air sparging well ASI-3 was increased from 10 cfm to 15 cfm and ASI-1 was increased from 5 cfm to 15 cfm. These increases are part of the continued ramping up of the system.
- The system operational uptime for May 2002 was 78% bringing the cumulative uptime to 89%. On May 14, 2002 thermal overload for the blower shut down the system. The dilution valve was opened to 30% and the system restarted on May 21, 2002.
- On April 23, 2002 sparging was started in ASI-1 and ASI-3, near the higher concentrated TCE wells (PMW-15 and PMW-16). The TCE concentrations in PMW-16 decreased from 210 ug/L to 164 ug/L – **a 28% decrease**. Similarly, the TCE concentrations in PMW-16 decreased from 130 ug/l to 106 ug/l – **a 20% decrease**. These concentration decreases are interpreted to be the result of sparging in the vicinity of these wells. TCE concentrations in these wells will be sampled monthly to track the progress of the cleanup.

CHROMIUM MANAGEMENT APPROACH

As part of the chrome management approach, well E-17 was placed on-line without chrome treatment on June 18, 2001 and weekly sampling commenced for 3 weeks and then reverted to monthly. The analytical results for the last six months are presented in the table below.

Extraction Well	12/14/01 CRT* (mg/L)	1/14/02 CRT* (mg/L)	2/12/02 CRT* (mg/L)	3/13/02 CRT* (mg/L)	3/19/02 CRT* (mg/L)	4/11/02 CRT* (mg/L)	5/9/02 CRT* (mg/L)
NE-1	NA	NA	NA	NA	NA	NS	NA
NE-2	NA	0.020	NA	NA	NA	0.042	NA
NE-3	NA	<0.005	NA	NA	NA	0.015	NA
NE-4	NA	0.015	NA	NA	NA	0.031	NA
NE-5	NA	0.112	NA	NA	NA	0.139	NA
E-7R	0.241	0.220	0.194	0.178	0.226	0.283	0.233
E-8	NA	0.064	NA	NA	NA	0.063	NA
E-10	NA	<0.005	NA	NA	NA	0.009	NA
E-11	NA	0.026	NA	NA	NA	0.038	NA
E-12	0.156	0.145	0.168	0.131	0.146	0.208	0.157
E-16	NA	NA	NA	NA	NA	NS	NA
E-17	0.191	0.179	0.189	0.159	0.190	0.224	0.179

Extraction Well	12/14/01 CRT* (mg/L)	1/14/02 CRT* (mg/L)	2/12/02 CRT* (mg/L)	3/13/02 CRT* (mg/L)	3/19/02 CRT* (mg/L)	4/11/02 CRT* (mg/L)	5/9/02 CRT* (mg/L)
Air stripper Effluent predicted (a)	0.073	0.068	0.075	0.068	0.062	0.104	0.079
Air stripper Effluent actual	0.067	0.070	0.053	0.059	0.067	0.102	0.065

*CRT – total chromium results by method EPA 200.7. All the samples were digested prior to analysis as required by the method.
NS – not sampled due to well off line.
NA – not analyzed as per sampling program
(a) – the predicted effluent concentration is based on a mass weighted average from the individual extraction wells.

Originally, the chrome system was scheduled to be dismantled in May 2002 following a year of chrome monitoring. At the request of ADEQ, the system will remain in idle status and the monthly monitoring program will continue.

NORTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Northern Subunit C system continued during May 2002. A total of 7.7 million gallons (MG) of water was extracted. The system operated 29.6 days out of 31 days in May. The treatment system influent sample contained TCE at a concentration of 2.8 µg/L (5/9/02), yielding a calculated mass removal this month of 0.18 lbs. Total mass removed to date by the system is 19.29 lbs. TCE was detected in the sample collected between the carbon vessels at 1.9 µg/L.

The Northern system was offline 1.4 days due to a high pressure alarm in the GAC 1 prefilter bag filter units. The high differential pressure on the filter unit activated the alarm on May 11, 2002 at 10:45 pm. The alarm was acknowledged at that time. The alarm was cleared and the system was restarted on May 13, 2002 at 7:30 am following replacement of the prefilter bags.

Production for May 2002 was as follows:

Wells Injection Wells	**Production (MG)**	**Average Rate (gpm)**	**Days On/Uptime Rate (days/gpm)**
I-101	*	*	
I-102	*	*	
Total Injected	*	*	**29.6/***
Extraction wells			
E-101	2.7	60.5	**29.6/63.3**
GAC#2 **	5.0	128.6	**27/128.6**
Total Extracted	**7.7**		

* Injection well flow meter not operating correctly and is reporting erroneous data
** Total flow based on 5/8/02 to 6/4/02

SOUTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

A total of 10.7 MG of water was extracted from the Southern Subunit C treatment system during May 2002. The system operated 29.5 days out of a possible 31 days. The May inlet sample contained TCE at 7.8 µg/L (5/9/02) yielding a calculated mass removal for TCE during May of 0.70 lbs. Total mass removed to date by the Southern Subunit C system is 150.03 lbs. The TCE result was <1.0 µg/L in the sample collected between the carbon vessels.

The Southern system was offline for 1.5 days due to a shorted wire in the E-201 jog switch enclosure and for inspection of the 3-way prefilter valve.

The table below shows the carbon change out history for the Southern Subunit C system:

Vessel Flow Configuration*	Operational Dates	Time to Detect TCE >5 µg/l**	Time Before Required Change out
A/B	Startup (10/94) –6/95	6 months	8 months
A'/B	6/95 – 12/95	3 months	6 months
A''/B	12/95 – 10/96	8 months	10 months
B/A''	10/96-1/22/97	1 month	3 months
A''/B'	1/22/97-10/30/97	9 months	10 months
B'/A'''	10/31/97 – 6/22/98	7 months	8 months
A'''/B''	6/22/98 – 8/25/99	12 months	14 months
B'''/A'''	8/25/99 – 10/4/00	13 months	13 months
A''''/B'''	10/4/00- 10/17/01	12 months	12 months
B''''/A''''	10/17/01- present	>7 months	TBD

* Vessel contents A - virgin coal based carbon
B - virgin coal based carbon
A' - on site regenerated coal based carbon
A''- coconut based carbon (applies to A''', A'''')
B' - coconut based carbon (applies to B'', B''', and B'''')
** The detection limit is 1 µg/L; the action level is 5 µg/L detected between the vessels; detection at this level initiates the planning process for the next change out. Time is presented in months after change out.

Production for the Southern Subunit C system in May 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate(gpm)	Days On/Avg.Rate (days/gpm)
E-201	6.1	136.6	29.5/143.6
E-202	4.6	103.0	29.5/108.3
E-203	0	0	0/0
Totals	**10.7**	**239.6**	**29.5/251.9**
Injection Wells	**Production (MG)**	**Average Rate(gpm)**	**Days On/Avg.Rate (days/gpm)**
I-201	4.2	94.1	29.5/98.9
I-202	4.1	91.8	29.5/96.5
I-203	2.0	44.8	29.5/47.1
Totals	**10.3**	**230.7**	**29.5/242.5**

SUBUNIT A TREATMENT SYSTEM OPERATION

A total of 23.0 MG of water was treated at the Subunit A system in May 2002. The Subunit A extraction system operated at an uptime rate of 515.2 gpm for 31 of 31 days this month. The treatment system influent sample contained TCE at a concentration of 106.0 µg/L (5/9/02) yielding a calculated mass removal of 20.35 lbs for the month of May. The cumulative total TCE mass removed by the Subunit A treatment system to date is 4,376.1 lbs. The TCE result was non-detect in the effluent sample taken from the air stripper tower at the Subunit A Treatment System at < 1.0 µg/L.

Production for the Subunit A system in May 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate (gpm)	On time Days/Rate (gpm)
Total Extracted	**23.0**	**515.2**	**31/515.2**
Total Injected	**22.1**	**495.1**	**31/495.1**

- The differences between total extracted and total injection is due to evaporation across the air stripper and meter variances.

Performance Measurement Tracking Log
Project Manager Input Form

PERIOD COVERED: May 2002
DATE DUE: June 15, 2002

ADMINISTRATIVE INFORMATION:

1. Main Site Code: **41-0000-02**
1a. Facility Site Code:
2. Site Name **Phoenix Goodyear Airport (south)**
3. Project Manager: **Nancy Lou Minkler**
4. Funding Type: **CERCLA- consent decree required**

Technical Information

5. DEQ Site Visits (RPM & Hydro)	0	6. Meetings w/Ips	0
7. Public Meetings Held	0	8. Fact Sheets on a site	
9. Water Samples Taken (DEQ/EPA)	3 0	10. Water Samples Taken (IP)	30
11. Soil/Soil Gas Samples Taken (DEQ/EPA)		12. Soil/Soil Gas Samples Taken (IP)	0
13. Air Samples Taken (DEQ/EPA)	0	14. Air Sample Taken (IP)	0
15. Ground Water Wells Installed (DEQ) Date Installed ___/___/___		16. Ground Water Wells Installed (IP)	0
17. Soil Vapor Wells Installed (DEQ) Date Installed ___/___/___	0	18. Soil Vapor Wells Installed (IP) Date Installed ___/___/___	0
19. Abandoned Ground Water Wells Date Abandoned ___/___/____	0	20. Abandoned Other Wells Date Abandoned ___/___/___	0
21. Remedial Investigation (started) overall area and/or facilities (see comments).	0	22. Remedial Investigations (completed)	0
23. Date Risk Assessment Completed	0	24. Date Feasibility Study Underway ___/___/___	0
25. Date Feasibility Study Went Underway	0	26. Remedial Design 10% 30% 60%	100%
27. Construction Start Date ___/___/___	0	28. Technology Used: pump and treat for water (air stripper Subunit A/GAC for Subunit C), SVE for Soil	
29. Treatment Plant Start Date 12/89 Subunit A; 2/94 North Subunit C; 10/94 South Subunit C		30. Date Remedial Action Completed ___/___/___	
31. Gallons Water Treated (VOCs) Subunit A 23,000,000 Southern Subunit C 10,700,000 Northern Subunit C 7,700,000		32. Hazardous Substance Removed (VOCs) in GW Treatment	21.23

33. Gallons Water Treated (metals)	0	**34.** Hazardous Substance Removed (metals)	0
35. Gallons Water Treated (other)	0	**36.** Hazardous Substance Removed (other)	0 lbs
37. Tons Soil Treated On-Site 0 (tons) 1 cy = 1 ton	0	**38.** Tons Soil Taken Off-site	0 (tons)
39. Acres Remediated		**40.** End Use of Water - (reinjection)	
41. Estimated reject Completion Date		**42.** Actual Completion Date ___/___/___	

SHARP
AND ASSOCIATES, INC.
Environmental Engineers,
Scientists, and Contractors

982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
FAX: (614) 841-4660

July 15, 2002

Ms. Nancy Lou Minkler
Remedial Project Manager
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Subject: Transmittal of June 2002, Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site, Goodyear, Arizona

Dear Ms. Minkler:

Attached is the monthly progress report for June 2002, for the PGA site in Goodyear, Arizona. This report is being submitted on behalf of The Goodyear Tire & Rubber Company (GTRC) to fulfill the reporting requirements outlined in the Consent Decree. Activities conducted this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual groundwater samples;
- splitting samples with USEPA's contractor on 10 site wells being sampled for perchlorates as part of a regional USEPA study (conducted June 17th);
- selecting a contractor to replace the faulty cable to extraction well NE-1 so that well can be placed back into service;
- operating the Air Sparging/SVE (AS/SVE) system; and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

If you have any questions, please feel free to call me at (614) 841-4650.

Sincerely,

SHARP AND ASSOCIATES, INC.

Todd Struttmann, P.E.
Principal

cc: J. Sussman, Goodyear Tire & Rubber Company
K. Salyer, U.S. EPA
M. Bolitho, Arizona Department of Water Resources
S. Zachary, Haley-Aldrich, Inc.
M. Sarmiento, BEW Systems, Inc.
R. Bartholomew, Bartholomew Engineering

TO:	Nancy Lou Minkler, Remedial Project Manager Arizona Department of Environmental Quality (ADEQ)
FROM:	Jeff Sussman, Project Manager The Goodyear Tire & Rubber Company (GTRC)
SUBJECT:	June 2002 Monthly Progress Report, Phoenix-Goodyear Airport (PGA) Site in Goodyear, Arizona
DATE:	July 15, 2002

CURRENT ACTIVITIES

This monthly report describes PGA site activities conducted during June 2002. Notable activities are described below or detailed in the sections that follow. Activities this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- collecting annual groundwater samples;
- splitting samples with USEPA's contractor on 10 site wells being sampled for perchlorates as part of a regional USEPA study (conducted June 17th);
- selecting a contractor to replace the faulty cable to extraction well NE-1 so that well can be placed back into service;
- operating the Air Sparging/SVE (AS/SVE) system; and
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001).

Trichloroethene (TCE) was detected in well COG#11 on December 19, 1997. GTRC agreed to continue sampling the well on a monthly basis until the Northern Subunit C delineation is complete and an extraction system in place. The sample collected from COG #11 on June 12, 2002, resulted in a non-detect at <1.0 µg/L for TCE.

OUTSTANDING ISSUES/RESOLUTIONS

To complete the extraction well network for capture of the Northern Subunit C plume, GTRC needs an additional extraction well north of Yuma Road. GTRC is working with the City of Goodyear for potential beneficial reuse of water from this additional extraction well. The City of Goodyear is pursuing access to this off-site property.

PLANS FOR THE NEXT MONTH

Plans for July 2002 include:

- continuing operation of the Subunit A treatment system, the Northern Subunit C treatment system, and the Southern Subunit C treatment system;
- continuing operation of E-17 without chrome treatment and collecting samples of the extraction wells and system effluent to confirm compliance with the discharge permit;
- continuing to pursue off site access for the proposed extraction well E-102;
- sampling PMW-15 and PMW-16 to evaluate progress of the sparging (July 9th);
- collecting a whole air sample from the SVE inlet;
- replacing the faulty cable to extraction well NE-1;

- collect a comprehensive round of water levels coordinated with PGA North, PGA south and Western Avenue (scheduled for July 30-31st); and
- further increasing the sparging rates of the SVE system.

Air Sparging/SVE in Infield

The SVE system was started up on November 29, 2001 and the air sparging commenced on November 30, 2001. Activities this month are summarized below.

- During June 2002, approximately 3 lbs of VOCs were removed from the system bringing the cumulative removal to ~ 111 lbs.
- Free product has not been observed in the wells monitored.
- On May 31, 2002, air sparging well ASI-3 was increased from 10 cfm to 15 cfm and ASI-1 was increased from 5 cfm to 15 cfm. The rates were kept constant in June. The rates will be increased further in July as part of the continued ramping up of the system.
- The system operational uptime for May 2002 was 100% bringing the cumulative uptime to 91%.
- On April 23, 2002 sparging was started in ASI-1 and ASI-3, near the higher concentrated TCE wells (PMW-15 and PMW-16). The TCE concentrations in PMW-16 decreased from 210 ug/L to 164 ug/L – **a 28% decrease**. Similarly, the TCE concentrations in PMW-16 decreased from 130 ug/l to 106 ug/l – **a 20% decrease**. These concentration decreases are interpreted to be the result of sparging in the vicinity of these wells. TCE concentrations in these wells will be sampled monthly to track the progress of the cleanup. Samples from PMW-15 and PMW-16 were collected the first week of July, but results were not available at the time of this report.

CHROMIUM MANAGEMENT APPROACH

As part of the chrome management approach, well E-17 was placed on-line without chrome treatment on June 18, 2001 and weekly sampling commenced for 3 weeks and then reverted to monthly. The analytical results for the last six months are presented in the table below.

Extraction Well	1/14/02 CRT* (mg/L)	2/12/02 CRT* (mg/L)	3/13/02 CRT* (mg/L)	3/19/02 CRT* (mg/L)	4/11/02 CRT* (mg/L)	5/9/02 CRT* (mg/L)	6/14/02 CRT* (mg/L)
NE-1	NA	NA	NA	NA	NS	NA	NA
NE-2	0.020	NA	NA	NA	0.042	NA	0.030
NE-3	<0.005	NA	NA	NA	0.015	NA	0.019
NE-4	0.015	NA	NA	NA	0.031	NA	0.029
NE-5	0.112	NA	NA	NA	0.139	NA	0.171
E-7R	0.220	0.194	0.178	0.226	0.283	0.233	0.280
E-8	0.064	NA	NA	NA	0.063	NA	0.008
E-10	<0.005	NA	NA	NA	0.009	NA	NA
E-11	0.026	NA	NA	NA	0.038	NA	0.047
E-12	0.145	0.168	0.131	0.146	0.208	0.157	0.192
E-16	NA	NA	NA	NA	NS	NA	NA
E-17	0.179	0.189	0.159	0.190	0.224	0.179	0.188

Extraction Well	1/14/02 CRT* (mg/L)	2/12/02 CRT* (mg/L)	3/13/02 CRT* (mg/L)	3/19/02 CRT* (mg/L)	4/11/02 CRT* (mg/L)	5/9/02 CRT* (mg/L)	6/14/02 CRT* (mg/L)
Air stripper Effluent predicted (a)	0.068	0.075	0.068	0.062	0.104	0.079	0.088
Air stripper Effluent actual	0.070	0.053	0.059	0.067	0.102	0.065	0.083

*CRT – total chromium results by method EPA 200.7. All the samples were digested prior to analysis as required by the method.
NS – not sampled due to well off line.
NA – not analyzed as per sampling program
(a) – the predicted effluent concentration is based on a mass weighted average from the individual extraction wells.

Originally, the chrome system was scheduled to be dismantled in May 2002 following a year of chrome monitoring. At the request of ADEQ, the system will remain in idle status and the monthly monitoring program will continue.

NORTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Northern Subunit C system continued during June 2002. A total of 9.1 million gallons (MG) of water was extracted. The system operated 30 days out of 30 days in June. The treatment system influent sample contained TCE at a concentration of 2.4 µg/L (6/12/02), yielding a calculated mass removal this month of 0.18 lbs. Total mass removed to date by the system is 19.47 lbs. TCE was detected in the sample collected between the carbon vessels at 1.5 µg/L.

Production for June 2002 was as follows:

Wells Injection Wells	**Production (MG)**	**Average Rate (gpm)**	**Days On/Uptime Rate (days/gpm)**
I-101	*	*	
I-102	*	*	
Total Injected	*	*	**30***
Extraction wells			
E-101	2.7	62.5	**30/62.5**
GAC#2 **	6.4	148.1	**30/148.1**
Total Extracted	**9.1**		

* Injection well flow meter not operating correctly and is reporting erroneous data
** Total flow based on 6/4/02 to 7/03/02

SOUTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

A total of 7.4 MG of water was extracted from the Southern Subunit C treatment system during June 2002. The system operated 30 days out of a possible 30 days. The June inlet sample contained TCE at 3.9 µg/L (6/12/02) yielding a calculated mass removal for TCE during June of 0.24 lbs. Total mass removed to date by the Southern Subunit C system is 150.27 lbs. The TCE result was <1.0 µg/L in the sample collected between the carbon vessels. The Southern system operated the entire month with exception of 0.5 hrs on 6/5/02 when the system was shutdown due to a momentary power failure.

The table below shows the carbon change out history for the Southern Subunit C system:

Vessel Flow Configuration*	Operational Dates	Time to Detect TCE >5 µg/l**	Time Before Required Change out
A/B	Startup (10/94) –6/95	6 months	8 months
A'/B	6/95 – 12/95	3 months	6 months
A''/B	12/95 – 10/96	8 months	10 months
B/A''	10/96-1/22/97	1 month	3 months
A''/B'	1/22/97-10/30/97	9 months	10 months
B'/A'''	10/31/97 – 6/22/98	7 months	8 months
A'''/B''	6/22/98 – 8/25/99	12 months	14 months
B'''/A'''	8/25/99 – 10/4/00	13 months	13 months
A''''/B'''	10/4/00- 10/17/01	12 months	12 months
B''''/A''''	10/17/01- present	>8 months	TBD

* Vessel contents A - virgin coal based carbon
B - virgin coal based carbon
A' - on site regenerated coal based carbon
A''- coconut based carbon (applies to A''', A'''')
B' - coconut based carbon (applies to B'', B''', and B'''')
** The detection limit is 1 µg/L; the action level is 5 µg/L detected between the vessels; detection at this level initiates the planning process for the next change out. Time is presented in months after change out.

Production for the Southern Subunit C system in June 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate(gpm)	Days On/Avg.Rate (days/gpm)
E-201	6.0	138.8	30/138.8
E-202	1.5	34.7	9.3/112.0
E-203	0		
Totals	**7.4**	**171.3**	**30/171.3**
Injection Wells	**Production (MG)**	**Average Rate(gpm)**	**Days On/Avg.Rate (days/gpm)**
I-201	4.8	111.1	30/111.1
I-202	1.3	30.1	30/30.1
I-203	1.9	44.0	30/44.0
Totals	**8.0**	**185.2**	**30/185.2**

SUBUNIT A TREATMENT SYSTEM OPERATION

A total of 21.1 MG of water was treated at the Subunit A system in June 2002. The Subunit A extraction system operated at an uptime rate of 505.3 gpm for 29 of 30 days this month. The treatment system influent sample contained TCE at a concentration of 170.0 µg/L (6/14/02) yielding a calculated mass removal of 29.94 lbs for the month of June. The cumulative total TCE mass removed by the Subunit A treatment system to date is 4406.04 lbs. The TCE result was non-detect in the effluent sample taken from the air stripper tower at the Subunit A Treatment System at < 1.0 µg/L.

The AST system was offline for 1 day due to failure of the acid/chemical feed pump. The internal components of the pump were repaired and the system was placed back online following the repair.

Production for the Subunit A system in June 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate (gpm)	On time Days/Rate (gpm)
Total Extracted	**21.1**	**488.4**	**29/505.3**
Total Injected	**20.2**	**467.6**	**29/483.7**

- The differences between total extracted and total injection is due to evaporation across the air stripper and meter variances.

Performance Measurement Tracking Log
Project Manager Input Form

PERIOD COVERED: June 2002
DATE DUE: July 15, 2002

ADMINISTRATIVE INFORMATION:

1. Main Site Code: **41-0000-02**
1a. Facility Site Code:
2. Site Name **Phoenix Goodyear Airport (south)**
3. Project Manager: **Nancy Lou Minkler**
4. Funding Type: **CERCLA- consent decree required**

Technical Information

5. DEQ Site Visits (RPM & Hydro)	0	6. Meetings w/Ips	0
7. Public Meetings Held	0	8. Fact Sheets on a site	
9. Water Samples Taken (DEQ/EPA)	3 0	10. Water Samples Taken (IP)	30
11. Soil/Soil Gas Samples Taken (DEQ/EPA)		12. Soil/Soil Gas Samples Taken (IP)	0
13. Air Samples Taken (DEQ/EPA)	0	14. Air Sample Taken (IP)	0
15. Ground Water Wells Installed (DEQ) Date Installed ___/___/___		16. Ground Water Wells Installed (IP)	0
17. Soil Vapor Wells Installed (DEQ) Date Installed ___/___/___	0	18. Soil Vapor Wells Installed (IP) Date Installed ___/___/___	0
19. Abandoned Ground Water Wells Date Abandoned ___/___/____	0	20. Abandoned Other Wells Date Abandoned ___/___/___	0
21. Remedial Investigation (started) overall area and/or facilities (see comments).	0	22. Remedial Investigations (completed)	0
23. Date Risk Assessment Completed	0	24. Date Feasibility Study Underway ___/___/___	0
25. Date Feasibility Study Went Underway	0	26. Remedial Design 10% 30% 60%	100%
27. Construction Start Date ___/___/___	0	28. Technology Used: pump and treat for water (air stripper Subunit A/GAC for Subunit C), SVE for Soil	
29. Treatment Plant Start Date 12/89 Subunit A; 2/94 North Subunit C; 10/94 South Subunit C		30. Date Remedial Action Completed ___/___/___	
31. Gallons Water Treated (VOCs) Subunit A 21,100,000 Southern Subunit C 7,400,000 Northern Subunit C 9,100,000		32. Hazardous Substance Removed (VOCs) in GW Treatment	30.36

33. Gallons Water Treated (metals)	0	**34.** Hazardous Substance Removed (metals)	0
35. Gallons Water Treated (other)	0	**36.** Hazardous Substance Removed (other)	0 lbs
37. Tons Soil Treated On-Site 0 (tons) 1 cy = 1 ton	0	**38.** Tons Soil Taken Off-site	0 (tons)
39. Acres Remediated		**40.** End Use of Water - (reinjection)	
41. Estimated reject Completion Date		**42.** Actual Completion Date ___/___/___	

SHARP
AND ASSOCIATES, INC.
Environmental Engineers,
Scientists, and Contractors

982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
FAX: (614) 841-4660

December 16, 2002

Ms. Nancy Lou Minkler
Remedial Project Manager
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Subject: Transmittal of November 2002, Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site, Goodyear, Arizona

Dear Ms. Minkler:

Attached is the monthly progress report for October 2002, for the PGA site in Goodyear, Arizona. This report is being submitted on behalf of The Goodyear Tire & Rubber Company (GTRC) to fulfill the reporting requirements outlined in the Consent Decree. Activities conducted this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- further increasing the sparging rates of the SVE system (November 1st);
- submitting a request to ADEQ and EPA to demolish the inactive chrome system (November 6st);
- meeting with USEPA, ADEQ, City of Goodyear and the off site property owner to discuss access for extraction well E-102 (November 6th);
- sampling PMW-15 and PMW-16 to evaluate progress of the sparging (November 20th);
- meeting with the landowner to draw up an agreement for access and lease so that well E-102 can be installed (November 21st);
- soliciting bids for extraction well E-102;
- operating the Air Sparging/SVE (AS/SVE) system;
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001); and

- meeting with Geomatrix for field inspection of old well alleged to be an old Goodyear Farms irrigation well. (Nov. 22)

If you have any questions, please feel free to call me at (614) 841-4650.

Sincerely,

SHARP AND ASSOCIATES, INC.

Todd Struttmann, P.E.
Principal

cc: J. Sussman, Goodyear Tire & Rubber Company
J. Sickles, USEPA
C. Prokop, USEPA
M. Bolitho, Arizona Department of Water Resources
S. Zachary, Haley-Aldrich, Inc.
M. Sarmiento, BEW Systems, Inc.
R. Bartholomew, Bartholomew Engineering

TO:	Nancy Lou Minkler, Remedial Project Manager Arizona Department of Environmental Quality (ADEQ)
FROM:	Jeff Sussman, Project Manager The Goodyear Tire & Rubber Company (GTRC)
SUBJECT:	October 2002 Monthly Progress Report, Phoenix-Goodyear Airport (PGA) Site in Goodyear, Arizona
DATE:	December 16, 2002

CURRENT ACTIVITIES

This monthly report describes PGA site activities conducted during November 2002. Notable activities are described below or detailed in the sections that follow. Activities this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- further increasing the sparging rates of the SVE system (November 1st);
- submitting a request to ADEQ and EPA to demolish the inactive chrome system (November 6th);
- meeting with USEPA, ADEQ, City of Goodyear and the off site property owner to discuss access for extraction well E-102 (November 6th);
- sampling PMW-15 and PMW-16 to evaluate progress of the sparging (November 20th);
- meeting with the off-site landowner to draw up an agreement for access and lease so that well E-102 can be installed (November 21st);
- soliciting bids for extraction well E-102;
- operating the Air Sparging/SVE (AS/SVE) system;
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001); and
- Meeting with Geomatrix for field inspection of old well alleged to be an old Goodyear Farms irrigation well. (November 22nd).

Trichloroethene (TCE) was detected in well COG#11 on December 19, 1997. GTRC agreed to continue sampling the well on a monthly basis until the Northern Subunit C delineation is complete and an extraction system in place. The sample collected from COG #11 on November 5, 2002, resulted in a non-detect at < 1.0 μg/L for TCE.

OUTSTANDING ISSUES/RESOLUTIONS

To complete the extraction well network for capture of the Northern Subunit C plume, GTRC needs an additional extraction well north of Yuma Road. . GTRC, USEPA, ADEQ, City of Goodyear and the off site landowner met to discuss access. A subsequent meeting with the landowner was held on November 21st.

PLANS FOR THE NEXT MONTH

Plans for December 2002 include:

- continuing operation of the Subunit A treatment system, the Northern Subunit C treatment system, and the Southern Subunit C treatment system;

- continuing operation of E-17 without chrome treatment and collecting samples of the extraction wells and system effluent to confirm compliance with the discharge permit;
- receiving concurrence from ADEQ and USEPA on dismantling the chrome system;
- continue resolving access with the landowner for installation of E-102; and
- ceasing operation of the air sparging/SVE in the infield at the end of December.

Air Sparging/SVE in Infield

The SVE system was started up on November 29, 2001 and the air sparging commenced on November 30, 2001. Activities this month are summarized below.

- During November 2002, approximately 7.5 lbs of VOCs were removed from the system bringing the cumulative removal to ~ 135.5 lbs.
- Free product has not been observed in the wells monitored.
- On November 1, 2002, air sparging rates were increased from 22 ACFM to 25 ACFM in wells ASI-1, ASI-2 and ASI-3.
- The system operational uptime for November 2002 was 100% bringing the cumulative uptime to 94.4%.

Groundwater samples showed decreasing concentrations since February 2002. In November 2002, the air sparging rates were further increased. The TCE concentrations increased in the November results. The December data will be reviewed before making any conclusions on the November results.

November results: PMW-15 247 µg/L
PMW-16 150 µg/L

CHROMIUM MANAGEMENT APPROACH

As part of the chrome management approach, well E-17 was placed on-line without chrome treatment on June 18, 2001 and weekly sampling commenced for 3 weeks and then reverted to monthly. The analytical results for the last six months are presented in the table below.

Extraction Well	5/9/02 CRT* (mg/L)	6/14/02 CRT* (mg/L)	7/16/02 CRT* (mg/L)	8/14/02 CRT (mg/L)	9/10/02 CRT (mg/L)	10/7/02 CRT (mg/L)	11/6/02 CRT (mg/L)
NE-1	NA	NA	NA	NA	NA	0.058	NA
NE-2	NA	0.030	0.027	NA	NA	0.012	NA
NE-3	NA	0.019	0.013	NA	NA	0.011	NA
NE-4	NA	0.029	0.028	NA	NA	0.030	NA
NE-5	NA	0.171	0.127	NA	NA	0.127	NA
E-7R	0.233	0.280	0.282	0.233	0.258	0.239	0.340
E-8	NA	0.008	0.065	NA	NA	0.056	NA
E-10	NA	NA	0.008	NA	NA	0.009	NA
E-11	NA	0.047	0.043	NA	NA	0.037	NA
E-12	0.157	0.192	0.204	0.171	0.181	0.184	0.265
E-16	NA	NA	NS	NA	NA	NS	NA
E-17	0.179	0.188	0.153	0.139	NS	NS	NA

Extraction Well	5/9/02 CRT* (mg/L)	6/14/02 CRT* (mg/L)	7/16/02 CRT* (mg/L)	8/14/02 CRT (mg/L)	9/10/02 CRT (mg/L)	10/7/02 CRT (mg/L)	11/6/02 CRT (mg/L)
Air stripper Effluent predicted (a)	0.089	0.079	0.095	0.079	0.081	0.084	0.092
Air stripper Effluent actual	0.065	0.083	0.081	0.065	0.088	0.086	0.087

*CRT – total chromium results by method EPA 200.7. All the samples were digested prior to analysis as required by the method.
NS – not sampled due to well off line.
NA – not analyzed as per sampling program
(a)– the predicted effluent concentration is based on a mass weighted average from the individual extraction wells

Originally, the chrome system was scheduled to be dismantled in May 2002 following a year of chrome monitoring. Based on discussions with EPA and ADEQ, the chrome management will continue until November 2002. GTRC provided a letter request for demolition of the chrome system on November 6, 2002, with a target for demolition in November pending analytical results. ADEQ is in the process of reviewing the request and committed to a response in December.

NORTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Northern Subunit C system continued during November 2002. A total of 7.3 million gallons (MG) of water was extracted. The system operated 30 out of 30 days in November . The treatment system influent sample contained TCE at a concentration of 2.8 µg/L (11/6/02), yielding a calculated mass removal this month of 0.16 lbs. Total mass removed to date by the system is 20.40 lbs. TCE was detected in the sample collected between the carbon vessels at 1.8 µg/L.

Production for November 2002 was as follows:

Wells Injection Wells	**Production (MG)**	**Average Rate (gpm)**	**Days On/Uptime Rate (days/gpm)**
I-101	*	*	
I-102	*	*	
Total Injected	*	*	**30****
Extraction wells			
E-101	2.7	62.5	**30/62.5**
GAC#2 **	Not available	Not available	
Total Extracted			

* Injection well flow meter not operating correctly and is reporting erroneous data
** Data from Lockheed Martin was not available as of the time of this report.

SOUTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

A total of 10.2 MG of water was extracted from the Southern Subunit C treatment system during November 2002. The system operated 29 out of a possible 30 days. The November inlet sample contained TCE at 6.8 µg/L (11/6/02) yielding a calculated mass removal for TCE during November

of 0.58 lbs. Total mass removed to date by the Southern Subunit C system is 152.61 lbs. The TCE result was 2.0 µg/L in the sample collected between the carbon vessels. Based on the prior history of this unit, the predicted date for carbon changeout is predicted to be in February.

The Southern Subunit C system was offline for

The table below shows the carbon change out history for the Southern Subunit C system:

Vessel Flow Configuration*	Operational Dates	Time to Detect TCE >5 µg/l**	Time Before Required Change out
A/B	Startup (10/94) –6/95	6 months	8 months
A'/B	6/95 – 12/95	3 months	6 months
A''/B	12/95 – 10/96	8 months	10 months
B/A''	10/96-1/22/97	1 month	3 months
A''/B'	1/22/97-10/30/97	9 months	10 months
B'/A'''	10/31/97 – 6/22/98	7 months	8 months
A'''/B''	6/22/98 – 8/25/99	12 months	14 months
B'''/A'''	8/25/99 – 10/4/00	13 months	13 months
A''''/B'''	10/4/00- 10/17/01	12 months	12 months
B''''/A''''	10/17/01- present	>13 months	TBD

* Vessel contents A - virgin coal based carbon
B - virgin coal based carbon
A' - on site regenerated coal based carbon
A''- coconut based carbon (applies to A''', A'''')
B' - coconut based carbon (applies to B'', B''', and B'''')
** The detection limit is 1 µg/L; the action level is 5 µg/L detected between the vessels; detection at this level initiates the planning process for the next change out. Time is presented in months after change out.

Production for the Southern Subunit C system in November 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate(gpm)	Days On/Avg.Rate (days/gpm)
E-201	5.94	136.6	30/136.6
E-202	4.3	99.5	30/99.5
E-203	WELL REMOVED	FROM SERVICE	
Totals	**10.2**	**236.1**	**236.1**
Injection Wells	**Production (MG)**	**Average Rate(gpm)**	**Days On/Avg.Rate (days/gpm)**
I-201	4.4	101.8	30/101.8
I-202	4.1	94.9	30/94.9
I-203	1.9	44.0	30/44.0
Totals	**10.4**	**240.7**	**30/240.7**

SUBUNIT A TREATMENT SYSTEM OPERATION

A total of 17.8 MG of water was treated at the Subunit A system in November 2002. The Subunit A extraction system operated at an uptime rate of 412.0 gpm for 30 of 30 days this month. The treatment system influent sample contained TCE at a concentration of 144.0 µg/L (11/6/02) yielding a calculated mass removal of 21.4 lbs for the month of November. The cumulative total TCE mass removed by the Subunit A treatment system to date is 4,503.22 lbs. The TCE result in the effluent sample taken from the air stripper tower at the Subunit A Treatment System was <1.0 µg/L. The detection of TCE in the effluent sample collected in October appeared to be an anomaly as levels have returned to the designed removal efficiency. Effluent results will be monitored for detections above the detection limits.
The Subunit A system was offline for

Production for the Subunit A system in November 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate (gpm)	On time Days/Rate (gpm)
Total Extracted	**17.8**	**412.0**	**30/412.0**
Total Injected	**17.1**	**395.8**	**30/395.8**

- The differences between total extracted and total injection is due to evaporation across the air stripper and meter variances.

SHARP Environmental
Engineers and Scientists
AND ASSOCIATES, INC.

982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
Fax (614) 841-4660

3

January 17, 2002

Ms. Nancy Lou Minkler
Remedial Project Manager
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 85012

Subject: Transmittal of December 2002, Monthly Progress Report
Phoenix-Goodyear Airport (PGA) Site, Goodyear, Arizona

Dear Ms. Minkler:

Attached is the monthly progress report for December 2002, for the PGA site in Goodyear, Arizona. This report is being submitted on behalf of The Goodyear Tire & Rubber Company (GTRC) to fulfill the reporting requirements outlined in the Consent Decree. Activities conducted this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- sampling PMW-15 and PMW-16 to evaluate progress of the sparging (December 16th);
- operating the Air Sparging/SVE (AS/SVE) system;
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001); receiving concurrence from ADEQ and USEPA on dismantling the chrome system (December 20th);
- begin preparation of Work Plan for abandonment of Old Goodyear Farms irrigation well;
- submittal of request for reduction in Groundwater Sampling Program (December 30th); and
- preparation of an off-site Access Agreement.

If you have any questions, please feel free to call me at (614) 841-4650.

Sincerely,

SHARP AND ASSOCIATES, INC.

Todd Struttmann, P.E.
Principal

cc: J. Sussman, Goodyear Tire & Rubber Company
J. Sickles, USEPA
C. Prokop, USEPA
M. Bolitho, Arizona Department of Water Resources
S. Zachary, Haley-Aldrich, Inc.
M. Sarmiento, BEW Systems, Inc.
R. Bartholomew, Bartholomew Engineering

TO:	Nancy Lou Minkler, Remedial Project Manager Arizona Department of Environmental Quality (ADEQ)
FROM:	Jeff Sussman, Project Manager The Goodyear Tire & Rubber Company (GTRC)
SUBJECT:	December 2002 Monthly Progress Report, Phoenix-Goodyear Airport (PGA) Site in Goodyear, Arizona
DATE:	January 16, 2003

CURRENT ACTIVITIES

This monthly report describes PGA site activities conducted during December 2002. Notable activities are described below or detailed in the sections that follow. Activities this month included:

- continuing operation of the three groundwater treatment systems;
- collecting monthly effluent samples;
- sampling PMW-15 and PMW-16 to evaluate progress of the sparging (December 16th);
- operating the Air Sparging/SVE (AS/SVE) system;
- continuing operation of E-17 without chromium treatment with sampling of the extraction wells and the effluent (began June 18, 2001); receiving concurrence from ADEQ and USEPA on dismantling the chrome system (December 20, 2002);
- begin preparation of Work Plan for abandonment of Old Goodyear Farms irrigation well;
- submittal of request for reduction in Groundwater Sampling Program (December 30th); and
- preparation of an off-site Access Agreement.

Trichloroethene (TCE) was detected in well COG#11 on November 19, 1997. GTRC agreed to continue sampling the well on a monthly basis until the Northern Subunit C delineation is complete and an extraction system in place. The sample collected from COG #11 on December 11, 2002, resulted in a non-detect at <1.0 µg/L for TCE.

OUTSTANDING ISSUES/RESOLUTIONS

To complete the extraction well network for capture of the Northern Subunit C plume, GTRC needs an additional extraction well north of Yuma Road. GTRC, USEPA, ADEQ, City of Goodyear and the off site landowner met to discuss access. A subsequent meeting with the landowner (Robert Kohnen) was held on November 21st.

PLANS FOR THE NEXT MONTH

Plans for January 2003 include:

- continuing operation of the Subunit A treatment system, the Northern Subunit C treatment system, and the Southern Subunit C treatment system;
- continuing operation of E-17 without chrome treatment and collecting samples of the extraction wells and system effluent to confirm compliance with the discharge permit;
- continue resolving access with the landowner for installation of E-102;
- preparing specifications for abandonment of the former Goodyear Farms well;
- scheduling for carbon regeneration for the Southern Subunit C system; and
- ceasing operation of the air sparging/SVE in the infield (shutdown January 10, 2003).

Air Sparging/SVE in Infield

The SVE system was started up on November 29, 2001 and the air sparging commenced on November 30, 2001. Activities this month are summarized below.

- During December 2002, approximately 5.0 lbs of VOCs were removed from the system bringing the cumulative removal to ~ 140.3 lbs.
- Free product has not been observed in the wells monitored.
- On December 3, 2002, air sparging rates were increased from 25 ACFM to 27 ACFM in wells ASI-1, ASI-2 and ASI-3.
- The system operational uptime for December 2002 was 72% bringing the cumulative uptime to 92.6%.

Groundwater samples showed decreasing concentrations since February 2002 when sparging was commenced in the vicinity of PMW-15 and PMW-16. The concentrations continued to decline through August 2002 as expected and then increased in November and December. The increased air sparging rates in the last few months may have mobilized additional contamination not being affected at the lower rates.

The SVE/air sparging system was shut down on January 10, 2003. The overall SVE/air sparging was considered successful in removing TCE from Subunit A. The system did not adversely affect the existing AVGAS plume. The monitoring points downgradient (south) of the sparging were not part of the network to monitor the true effect of the sparging in the infield. It is important to note that groundwater from the area of the infield flows towards extraction well E-7R. Baseline concentrations in well E-7R were 267 ug/L in January of 2002 immediately after SVE startup. The concentrations in the May and August 2002 results were 266 and 267 ug/L, respectively. The concentration in October increased to 440 ug/L. One interpretation of these data is that the sparging mobilized some of the TCE in the ground water which is extracted by well E-7R. The effect of this sparging was later observed in the extraction well (after accounting for the ground water flow time of travel). Subsequent monitoring of E-7 will help determine whether this interpretation is further supported.

CHROMIUM MANAGEMENT APPROACH

As part of the chrome management approach, well E-17 was placed on-line without chrome treatment on June 18, 2001 and weekly sampling commenced for 3 weeks and then reverted to monthly. The analytical results for the last six months are presented in the table below.

Extraction Well	6/14/02 CRT* (mg/L)	7/16/02 CRT* (mg/L)	8/14/02 CRT (mg/L)	9/10/02 CRT (mg/L)	10/7/02 CRT (mg/L)	11/6/02 CRT (mg/L)	12/12/02 CRT (mg/L)
NE-1	NA	NA	NA	NA	0.058	NA	NA
NE-2	0.030	0.027	NA	NA	0.012	NA	NA
NE-3	0.019	0.013	NA	NA	0.011	NA	NA
NE-4	0.029	0.028	NA	NA	0.030	NA	NA
NE-5	0.171	0.127	NA	NA	0.127	NA	NA
E-7R	0.280	0.282	0.233	0.258	0.239	0.340	0.246

Extraction Well	6/14/02 CRT* (mg/L)	7/16/02 CRT* (mg/L)	8/14/02 CRT (mg/L)	9/10/02 CRT (mg/L)	10/7/02 CRT (mg/L)	11/6/02 CRT (mg/L)	12/12/02 CRT (mg/L)
E-8	0.008	0.065	NA	NA	0.056	NA	NA
E-10	NA	0.008	NA	NA	0.009	NA	NA
E-11	0.047	0.043	NA	NA	0.037	NA	NA
E-12	0.192	0.204	0.171	0.181	0.184	0.265	0.189
E-16	NA	NS	NA	NA	NS	NA	NA
E-17	0.188	0.153	0.139	NS	NS	NA	NA
Air stripper Effluent predicted (a)	0.079	0.095	0.079	0.081	0.084	0.092	0.77
Air stripper Effluent actual	0.083	0.081	0.065	0.088	0.086	0.087	0.073

*CRT – total chromium results by method EPA 200 7. All the samples were digested prior to analysis as required by the method.
NS – not sampled due to well off line.
NA – not analyzed as per sampling program
(a)– the predicted effluent concentration is based on a mass weighted average from the individual extraction wells

Originally, the chrome system was scheduled to be dismantled in May 2002 following a year of chrome monitoring. Based on discussions with EPA and ADEQ, the chrome management will continue until November 2002. GTRC provided a letter request for demolition of the chrome system on November 6, 2002, with a target for demolition in November pending analytical results. On December 20, 2002, ADEQ provided an acceptance to GTRC's proposal for demolition of the chrome system. Plans are in process to demolish the chrome plant during First Quarter of 2003.

NORTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

Operation of the Northern Subunit C system continued during December 2002. A total of 4.9 million gallons (MG) of water was extracted. The system operated 31 out of 31 days in December. The treatment system influent sample contained TCE at a concentration of 2.6 µg/L (12/11/02), yielding a calculated mass removal this month of 0.15 lbs. This total reflects the additional mass that was not reported in the November monthly report from Lockheed Martin extraction well GAC2. Total mass removed to date by the system is 20.55 lbs. TCE was detected in the sample collected between the carbon vessels at 1.7 µg/L.

Production for December 2002 was as follows:

Wells Injection Wells	**Production (MG)**	**Average Rate (gpm)**	**Days On/Uptime Rate (days/gpm)**
I-101	*	*	
I-102	*	*	
Total Injected	*	*	**30****
Extraction wells			
E-101	2.7	60.5	**31/60.5**
GAC#2 ** (Nov. 02)	2.2		
GAC#2 ** (Dec. 02)	2.2	50.0	**50.0**

Total Extracted	**4.9**		

* Injection well flow meter not operating correctly and is reporting erroneous data

SOUTHERN SUBUNIT C TREATMENT SYSTEM OPERATION

A total of 10.3 MG of water was extracted from the Southern Subunit C treatment system during December 2002. The system operated 31 out of a possible 31 days. The December inlet sample contained TCE at 16.4 µg/L (12/11/02) yielding a calculated mass removal for TCE during December of 1.41 lbs. Total mass removed to date by the Southern Subunit C system is 154.02 lbs.

The TCE result for the sample collected between the carbon vessels was 5.3 µg/L. This result is above the action level set for the site and mandates that immediate shut down of the treatment system and scheduling a carbon changeout. The treatment system was shutdown following receipt of the results on January 6, 2003 and will remain offline until the regeneration event is complete. A regeneration of the carbon vessels has been scheduled for January 16, 2003. Following this regeneration the system will be restarted.

The table below shows the carbon change out history for the Southern Subunit C system:

Vessel Flow Configuration*	Operational Dates	Time to Detect TCE >5 µg/l**	Time Before Required Change out
A/B	Startup (10/94) –6/95	6 months	8 months
A'/B	6/95 – 12/95	3 months	6 months
A''/B	12/95 – 10/96	8 months	10 months
B/A''	10/96-1/22/97	1 month	3 months
A''/B'	1/22/97-10/30/97	9 months	10 months
B'/A'''	10/31/97 – 6/22/98	7 months	8 months
A'''/B''	6/22/98 – 8/25/99	12 months	14 months
B'''/A'''	8/25/99 – 10/4/00	13 months	13 months
A''''/B'''	10/4/00- 10/17/01	12 months	12 months
B''''/A''''	10/17/01- present	14 months	14 months

* Vessel contents A - virgin coal based carbon
B - virgin coal based carbon
A' - on site regenerated coal based carbon
A''- coconut based carbon (applies to A''', A'''')
B' - coconut based carbon (applies to B'', B''', and B'''')
** The detection limit is 1 µg/L; the action level is 5 µg/L detected between the vessels; detection at this level initiates the planning process for the next change out. Time is presented in months after change out.

Production for the Southern Subunit C system in December 2002 is as follows:

Extraction Wells	Production (MG)	Average Rate(gpm)	Days On/Avg.Rate (days/gpm)
E-201	6.0	134.4	31/134.4
E-202	4.3	96.3	31/96.3
E-203	WELL REMOVED	FROM SERVICE	
Totals	**10.3**	**230.7**	**31/230.7**
Injection Wells	**Production (MG)**	**Average Rate(gpm)**	**Days On/Avg.Rate (days/gpm)**

I-201	4.1	91.8	31/91.8
I-202	3.9	87.4	31/87.4
I-203	2.0	44.8	31/44.8
Totals	**10.0**	**224.0**	**31/224.0**

SUBUNIT A TREATMENT SYSTEM OPERATION

A total of 20.3 MG of water was treated at the Subunit A system in December 2002. The Subunit A extraction system operated at an uptime rate of 454.7 gpm for 31 of 31 days this month. The treatment system influent sample contained TCE at a concentration of 193.0 µg/L (12/12/02) yielding a calculated mass removal of 32.71 lbs for the month of December. The cumulative total TCE mass removed by the Subunit A treatment system to date is 4,535.93 lbs. The TCE result in the effluent sample taken from the air stripper tower at the Subunit A Treatment System was <1 0 µg/L.

Production for the Subunit A system in December 2002 is as follows:

Extraction Wells	**Production (MG)**	**Average Rate (gpm)**	**On time Days/Rate (gpm)**
Total Extracted	**20.3**	**454.7**	**31/454.7**
Total Injected	**19.6**	**439.1**	**31/439.1**

- The differences between total extracted and total injection is due to evaporation across the air stripper and meter variances.

Performance Measurement Tracking Log
Project Manager Input Form

PERIOD COVERED: December 2002
DATE DUE: January 15, 2003

ADMINISTRATIVE INFORMATION:

1. Main Site Code: **41-0000-02**
1a. Facility Site Code:
2. Site Name **Phoenix Goodyear Airport (south)**
3. Project Manager: **Nancy Lou Minkler**
4. Funding Type: **CERCLA- consent decree required**

Technical Information

5. DEQ Site Visits (RPM & Hydro)	0	6. Meetings w/Ips	0
7. Public Meetings Held	0	8. Fact Sheets on a site	
9. Water Samples Taken (DEQ/EPA)	30	10. Water Samples Taken (IP)	
11. Soil/Soil Gas Samples Taken (DEQ/EPA)		12. Soil/Soil Gas Samples Taken (IP)	0
13. Air Samples Taken (DEQ/EPA)	0	14. Air Sample Taken (IP)	0
15. Ground Water Wells Installed (DEQ) Date Installed ___/___/___		16. Ground Water Wells Installed (IP)	0
17. Soil Vapor Wells Installed (DEQ) Date Installed ___/___/___	0	18. Soil Vapor Wells Installed (IP) Date Installed ___/___/___	0
19. Abandoned Ground Water Wells Date Abandoned ___/___/____	0	20. Abandoned Other Wells Date Abandoned ___/___/___	0
21. Remedial Investigation (started) overall area and/or facilities (see comments).	0	22. Remedial Investigations (completed)	0
23. Date Risk Assessment Completed	0	24. Date Feasibility Study Underway ___/___/___	0
25. Date Feasibility Study Went Underway	0	26. Remedial Design 10% 30% 60%	100%
27. Construction Start Date ___/___/___	0	28. Technology Used: pump and treat for water (air stripper Subunit A/GAC for Subunit C), SVE for Soil	
29. Treatment Plant Start Date 12/89 Subunit A; 2/94 North Subunit C; 10/94 South Subunit C		30. Date Remedial Action Completed ___/___/___	
31. Gallons Water Treated (VOCs) Subunit A 20,300,000 Southern Subunit C 10,300,000 Northern Subunit C 4,900,000		32. Hazardous Substance Removed (VOCs) in GW Treatment	34.27
33. Gallons Water Treated (metals)	0	34. Hazardous Substance Removed (metals)	0
35. Gallons Water Treated (other)	0	36. Hazardous Substance Removed (other)	0 lbs
37. Tons Soil Treated On-Site 0 (tons) 1 cy = 1 ton	0	38. Tons Soil Taken Off-site	0 (tons)
39. Acres Remediated		40. End Use of Water - (reinjection)	
41. Estimated reject Completion Date		42. Actual Completion Date ___/___/___	